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Water Supply Outlook For Washington

U.S.D.A.
APR 3 1982
COUNTY OF KING
67-1-100



SOIL CONSERVATION SERVICE
U.S. DEPARTMENT OF AGRICULTURE

Cooperating with

DEPARTMENT OF ECOLOGY STATE OF WASHINGTON

AS OF
April 1, 1982

TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season will interact with a resultant average effect on runoff. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1900 snow courses in Western United States and in the Columbia Basin in British Columbia. Networks of automatic snow water equivalent and related data sensing devices, along with radio telemetry are expanding and will provide a continuous record of snow water and other parameters at key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data on reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

Cover: Lone Cone, near Norwood, Colorado, blanketed by its winter mantle of snow.

PUBLISHED BY SOIL CONSERVATION SERVICE

The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, West Technical Service Center, Room 510, 511 N.W. Broadway, Portland, Oregon 97209.

Copies of state and local reports may also be obtained from state offices of the Soil Conservation Service in the following states:

STATE	ADDRESS
Alaska	Room 129, 2221 East Northern Lights Blvd., Anchorage, Alaska 99504
Arizona	Room 3008, Federal Building, 230 N. First Ave., Phoenix, Arizona 85025
Colorado (N. Mex.)	P. O. Box 17107, Denver, Colorado 80217
Idaho	Room 345, 304 N. 8th. St., Boise, Idaho 83702
Montana	P. O. Box 98, Bozeman, Montana 59715
Nevada	P. O. Box 4850, Reno, Nevada 89505
Oregon	1220 S. W. Third Ave., Portland, Oregon 97204
Utah	4420 Federal Bldg., 125 South State St., Salt Lake City, Utah 84138
Washington	360 U. S. Court House, Spokane, Washington 99201
Wyoming	P. O. Box 2440, Casper, Wyoming 82602

PUBLISHED BY OTHER AGENCIES

Water Supply Outlook reports prepared by other agencies include a report for California by the Snow Surveys Branch, California Department of Water Resources, P.O. Box 388, Sacramento, California 95802 --- for British Columbia by the Ministry of the Environment, Water Investigations Branch, Parliament Buildings, Victoria, British Columbia V8V 1X5 --- for Yukon Territory by the Department of Indian and Northern Affairs, Northern Operations Branch, 200 Range Road, Whitehorse, Yukon Territory Y1A 3V1 --- and for Alberta, Saskatchewan, and N.W.T. by the Water Survey of Canada, Inland Waters Branch, 110-12 Avenue S.W, Calgary, Alberta T3C 1A6.



WATER SUPPLY OUTLOOK FOR WASHINGTON

and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

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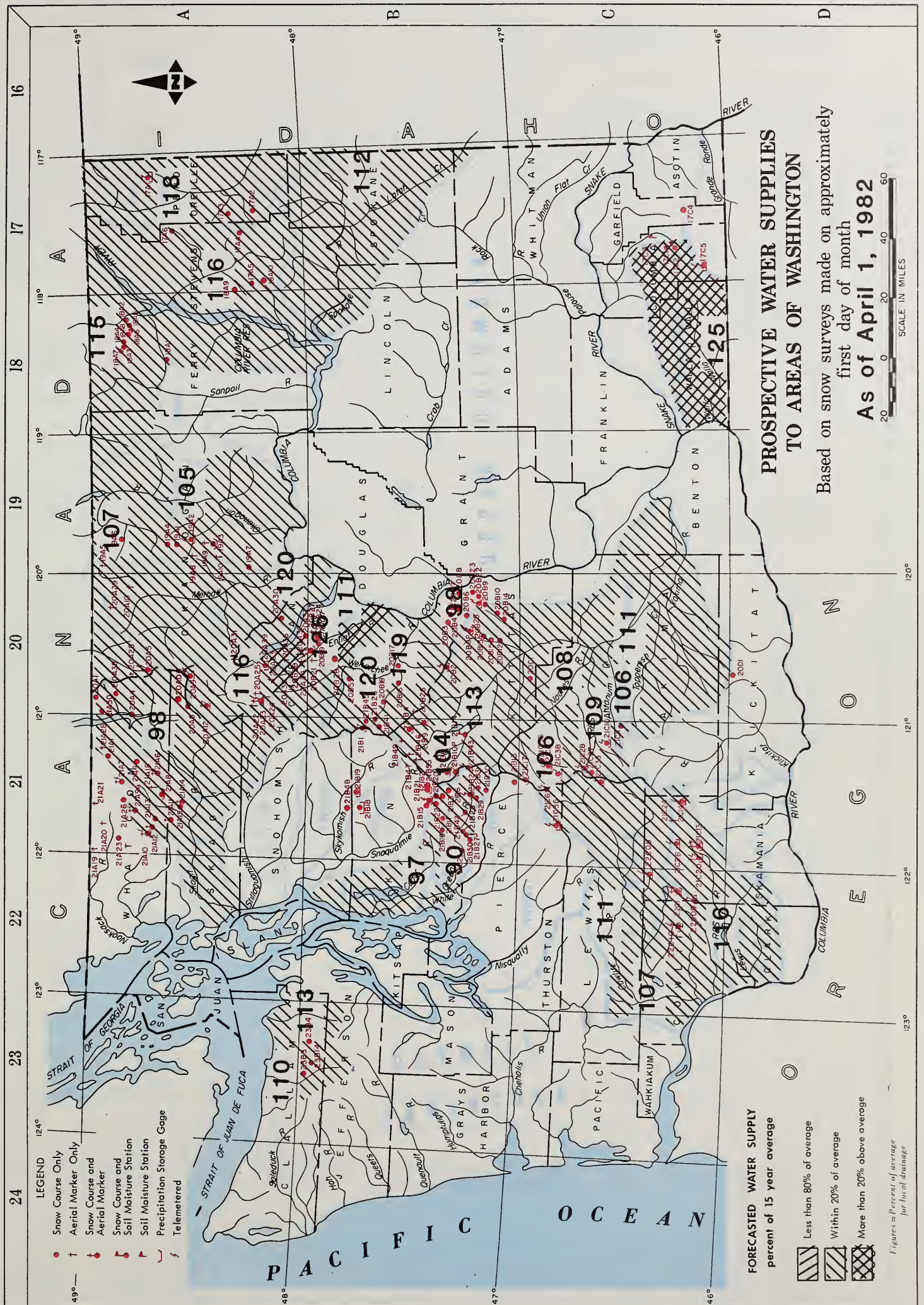
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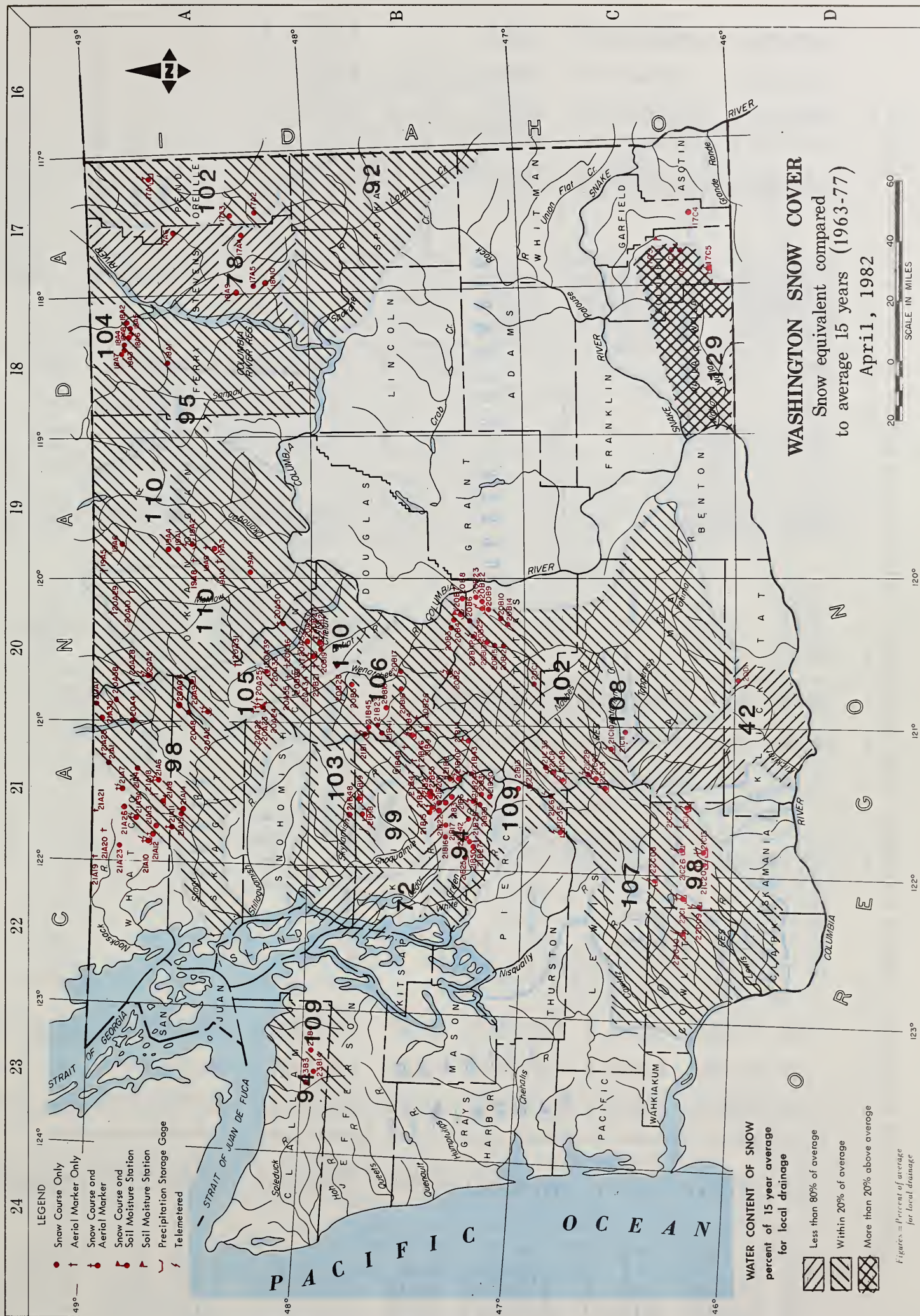
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INDEX to WASHINGTON SNOW COURSES, SOIL MOISTURE STATIONS and PRECIPITATION STORAGE GAGES

UPPER COLUMBIA DRAINAGE				NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
Bayer Mountain Bunchgrass Meadow Winchester Creek	Pend Oreille River	17A2	7	31N	43E				5250
		17A1SP	24	37N	44E				5000
		17A3	30	33N	43E				2970
Boulder Road Butte Creek Cabin Creek Goat Creek	Kettle River	18A2	36	39N	36E				1450
		18A3	28	39N	35E				4070
		18A8	5	38N	36E				3170
		18A4	26	39N	35E				3595
Snow Caps Creek Snow Caps Trail Summit G. S.	Colville River	18A5	3	38N	36E				2150
		18A6	5	38N	35E				2720
		18A7	20	39N	35E				4600
Baird Carlson Chewelah Stranger Mountain Toga	Sanpoil River	17A6	19	36N	42E				3215
		18A9	34	32N	38E				2885
		17A4	11	32N	41E				4925
		17A5	26	31N	38E				4990
Sherman Creek Pass	Okanogan River	18A10	6	29N	38E				3370
Clark Muckluck Mutton Creek No. 1 Mutton Creek No. 2 Paysayten Rusty Creek Salmon Meadows Starvation Mtn. Touts Coulee	Methow River	19A8a	2	36N	23E				7000
		19A9a	20	36N	24E				6750
		19A1	30	37N	24E				5700
		19A4	19	37N	24E				6000
Billy Goat Pass Dollar Watch Harts Pass Horseshoe Basin Loup Loop	Chelan Lake Basin	20A28a	32	40N	18E				4300
		19A3P	18	35N	24E				4000
		19A2SP	33	37N	24E				4500
		19A10a	15	35N	23E				6750
Cloudy Pass Greenwood Flat Little Meadows Lyman Lake Park Creek Ridge Rainy Pass Safety Harbor War Creek Pass Mirror Lake	Entiat River	19A6	30	39N	23E				2845
Blue Creek G. S. Brief Entiat Meadows Entiat River Trail Four Mile Ridge Fox Camp Pope Ridge Pope Ridge Pope Ridge Pugh Ridge Shady Pass Snow Bushy Tommy Creek	Wenatchee River	20A22a	12	31N	15E				6500
		20A25a	3	31N	16E				3540
		20A24a	8	31N	16E				5275
		20A23SP	18	31N	16E				5900
Bernie-Mill Creek Bernie-Mill Creek (New) Blewett Pass No. 2 Chiwaukum G. S. Lake Wenatchee Leavenworth R. S. Merritt Stevens Pass Stevens Pass Sand Shed Trough #2	Klickitat River	20A12SP	18	34N	16E				4600
		20A9SP	21	35N	17E				4780
		20A30a	32	31N	20E				6300
		20A31a	34	33N	18E				6500
Cedar Creek City Cabin Mt. Gardner Aux. Mt. Lindsay Mt. Washington Rex River South Fork Cedar Tinkham Creek	Asotin Creek	20A39	30	31N	18E				5600
Spruce Springs Touchet River	Touchet River	17C4	9	8N	40E				5700
Couse Homestead Martin Springs (Helmers SW) Touchet No. 2	Klickitat River	17C3m	2	9N	40E				3370
		17C1	11	9N	40E				4030
		17C2M	23	9N	40E				4400
		17C5SP	6	7N	40E				5530
Satus Pass	Klickitat River	20D1	21	6N	17E				4030
Airstrip Charley Creek Cougar Mountain Grass Mountain No. 2 Grass Mountain No. 3 Lester Creek Lynn Lake Sawmill Ridge Snowshoe Butte Stampede Pass Twin Camp	Green River	21B24P	18	20N	11E				1800
		21B25	27	21N	8E				1200
		21B42SP	21	21N	9E				3200
		21B27	14	20N	8E				2900
City Cabin Mt. Gardner Aux. Mt. Lindsay Mt. Washington Rex River South Fork Cedar Tinkham Creek	Cedar River	21B28	12	20N	8E				2100
		21B29	36	20N	10E				3100
		21B50	22	20N	8E				4000
		21B31	5	19N	11E				4700
Alpine Meadow Ollalie Meadows South Fork Tolt Ollalie Meadows East	Snoqualmie River	21B43SP	14	20N	11E				5000
		21B10 SP	25	21N	11E				3860
		21B30	18	19N	11E				4100
21B83 21B2JP 21B22 21B16P 21B15P 21B17P 21B6P 21B20P	Snoqualmie River	21B83	10	21N	10E				2390
		21B2JP	30	22N	10E				3300
		21B22	31	22N	10E				2500
		21B16P	31	22N	9E				2500
Alpine Meadow Ollalie Meadows South Fork Tolt Ollalie Meadows East	Snoqualmie River	21B15P	8	22N	9E				3000
		21B17P	11	21N	9E				2400
		21B6P	24	21N	10E				3000
		21B20P	1	21N	10E				3400
21B84P 21B2P 21B18P 21B55SP	Snoqualmie River	21B84P	31	27N	9E				3500
		21B2P	19	22N	11E				3625
		21B18P	26	26N	9E				1900
		21B55SP	20	22N	11E				8700
Lake Elizabeth	Skykomish River	21B19P	33	26N	10E				2900
21A44 21A1 21A28a 21A28b 21A28c 21A28d 21A28e 21A28f 21A28g 21A28h 21A28i 21A28j 21A28k 21A28l 21A28m 21A28n 21A28o 21A28p 21A28q 21A28r 21A28s 21A28t 21A28u 21A28v 21A28w 21A28x 21A28y 21A28z	Skagit River	21A44	35	39N	12E				2200
		21A1	9	39N	12E				3680
		21A28a	26	40N	12E				6000
		21A28b	34	38N	16E				5900
Beaver Creek Trail Beaver Pass Brown Top Devils Park Freezeout Creek Trail Freezeout Meadows (New) Granite Creek Meadows Cabins New Horzeone Lake Thunder Basin	Skagit River	21A28c	14	40N	14E				3500
		20A1	8	40N	16E				5000
		20A38	25	36N	14E				3500
		20A06	29	36N	14E				1900
Dock Butte Easy Pass Jasper Pass Martien Lake Mount Blum Rocky Creek Schreibers Meadow S. F. Thunder Creek Sulphur Creek Three Mile Creek Watson Lakes	Baker River	21A30	19	40N	14E				2800
		20A07	10	35N	14E				4200
Bald Mountain Canyon Glacier Creek Panorama New Twin Lakes	Nooksack River	21A11A	8	36N	8E				3800
		21A7A	17	39N	11E				5200
		21A6A	19	38N	11E				5400
		21A9A	23	38N	8E				3600
Deer Park Cox Valley Hurricane	Dungeness River	21A18a	27	38N	10E				5800
		21A12AP	20	37N	8E				2100
		21A10AP	18	37N	8E				3400
		21A14A	20	36N	9E				2200
2384 23814 2383	Elwha River	2384	1	28N	5W				5200
		23814	31	29N	6W				4500
21A7 21A7a 21A7b 21A7c 21A7d 21A7e 21A7f 21A7g 21A7h 21A7i 21A7j 21A7k 21A7l 21A7m 21A7n 21A7o 21A7p 21A7q 21A7r 21A7s 21A7t 21A7u 21A7v 21A7w 21A7x 21A7y 21A7z	LEGEND	21A7	Snow Course Only						
		21A7a	Aerial Marker Only						
		21A7b	Snow Course And Aerial Marker						
		21A7c	Snow Course And Soil Moisture Station						
21A7m 21A7n 21A7o 21A7p 21A7q 21A7r 21A7s 21A7t 21A7u 21A7v 21A7w 21A7x 21A7y 21A7z	LEGEND	21A7m	Soil Moisture Station						
		21A7n	Snow Course And Precipitation Storage Gage						
		21A7o	Precipitation Storage Gage						
		21A7p	Precipitation Storage Gage						



INDEX to WASHINGTON SNOW COURSES, SOIL MOISTURE STATIONS and PRECIPITATION STORAGE GAGES

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.
UPPER COLUMBIA DRAINAGE					
Pend Oreille River					
Bayer Mountain	17A2	7	31N	43E	5250
Bunchgrass Meadow	17A1SP	24	37N	44E	5000
Winchester Creek	17A3	30	33N	43E	2970
Kettle River					
Boulder Road	18A2	36	39N	36E	1450
Butte Creek	18A3	28	39N	35E	4070
Cabin Creek	18A8	5	38N	36E	3170
Goat Creek	18A4	26	39N	35E	3395
Snow Caps Creek	18A5	3	38N	36E	2150
Snow Caps Trail	18A6	5	38N	36E	2720
Summit G. S.	18A7	20	39N	35E	4600
Colville River					
Baird	17A6	19	36N	42E	3215
Carlson	18A9	34	32N	38E	2885
Chewelah	17A4	11	32N	41E	4925
Stranger Mountain	17A5	26	31N	38E	4990
Togo	18A10	6	29N	38E	3370
Sanpoil River					
Sherman Creek Pass	18A1	19	36N	35E	5350
Okanogan River					
Clark	19A8a	2	36N	23E	7000
Muckamuck	19A9a	20	36N	24E	6750
Mutton Creek No. 1	19A1	30	37N	24E	5700
Mutton Creek No. 2	19A4	19	37N	24E	6000
Paydayten	20A28a	32	40N	18E	4300
Rusty Creek	19A3P	18	35N	24E	4000
Salmon Meadows	19A2SP	33	37N	24E	4500
Starvation Mtn.	19A10a	15	35N	23E	6750
Touts Coulee	19A6	30	39N	23E	2845
Methow River					
Billy Goat Pass	20A10a	10	38N	20E	6400
Dallar Watch	20A29a	8	39N	20E	7000
Harts Pass	20A55P	7	37N	18E	6500
Horseshoe Basin	19A5a	15	40N	23E	7000
Loup Loop	19A7	36	34N	23E	4650
Chelan Lake Basin					
Cloudy Pass	20A22a	12	31N	15E	6500
Greenwood Flat	20A25a	3	31N	16E	3540
Little Meadows	20A24a	8	31N	16E	5275
Lyman Lake	20A23SP	18	31N	16E	5900
Park Creek Ridge	20A12SP	18	34N	16E	4600
Rainy Pass	20A9SP	21	35N	17E	4780
Safety Harbor	20A30a	32	31N	20E	6300
War Creek Pass	20A31a	34	33N	18E	6500
Mirror Lake	20A39	30	31N	18E	3600
Entiat River					
Blue Creek G.S.	20B28a	19	28N	18E	5425
Brief	20B19	34	28N	19E	1600
Entiat Meadows	20A33a	28	31N	17E	4540
Entiat River Trail	20A34a	2	29N	17E	3325
Four Mile Ridge	20B27a	15	28N	19E	6800
Fox Camp	20A36a	17	30N	18E	6510
Pope Ridge	20B20	22	29N	18E	3540
Pope Ridge Snow Pillow	20B24SP	22	29N	18E	3540
Pugh Ridge	20A32a	34	30N	18E	6725
Shady Pass	20A37	20	29N	19E	6200
Snow Brushy	20A35a	21	30N	17E	3910
Tommy Creek	20B21a	10	28N	18E	4900
Wenatchee River					
Berne-Mill Creek	21B23	7	26N	15E	3170
Berne-Mill Creek (New)	21B41SP	13	26N	14E	3240
Blewett Pass No. 2	20B2SP	35	26N	17E	4270
Chiwaukum G. S.	20B16	4	25N	17E	1810
Lake Wenatchee	20B5	33	27N	17E	1970
Leavenworth R. S.	20B17	1	24N	17E	1127
Merritt	20B18	4	26N	16E	2140
Stevens Pass	21B15P	14	26N	13E	4070
Stevens Pass Sand Shed	21B45	12	26N	13E	3700
Trough #2	20B25SP	10	20N	19E	5310
LOWER COLUMBIA DRAINAGE					
Asotin Creek					
Spruce Springs	17C4	9	8N	40E	5700
Touchet River					
Cause	17C3m	2	9N	40E	3370
Homestead	17C1	11	9N	40E	4030
Martin Springs (Helmers SM)	17C2M	23	9N	40E	4400
Touchet No. 2	17C5SP	6	7N	40E	5530
Klickitat River					
Satus Pass	20D1	21	6N	17E	4030
Snoqualmie River					
Alpine Meadow	21B48	31	27N	9E	3500
Olallie Meadows	21B2P	19	22N	11E	3623
South Fork Tolt	21B18P	26	26N	9E	1900
Olallie Meadows East	21B55SP	20	22N	11E	8700
Skykomish River					
Lake Elizabeth	21B19P	33	26N	10E	2900
Nisqually River					
Paradise Park (New)	21C35SP	13	15N	8E	5500
Corral Pass	21B13SP	30	18N	11E	6000
Green River					
Airstrip	21B24P	18	20N	11E	1800
Charley Creek	21B25	27	21N	8E	1200
Cougar Mountain	21B42SP	21	21N	9E	3200
Grass Mountain No. 2	21B27	14	20N	8E	2900
Grass Mountain No. 3	21B28	12	20N	8E	2100
Lester Creek	21B29	36	20N	10E	3100
Lynn Lake	21B50	22	20N	8E	4000
Sawmill Ridge	21B31	5	19N	11E	4700
Snowshoe Butte	21B43SP	14	20N	11E	5000
Stampede Pass	21B10SP	25	21N	11E	3860
Twin Camp	21B30	18	19N	11E	4100
Cedar River					
City Cabin	21B3	10	21N	10E	2390
Mt. Gardner	21B21P	30	22N	10E	3300
Mt. Gardner Aux.	21B22	31	22N	10E	2500
Mt. Lindsay	21B16P	31	22N	9E	2500
Mt. Washington	21B15P	8	22N	9E	3000
Rex River	21B17P	11	21N	9E	2400
South Fork Cedar	21B6P	24	21N	10E	3000
Tinkham Creek	21B20P	1	21N	10E	3400
PUGET SOUND DRAINAGE					
Nisqually River					
Bald Mountain	21A19a	7	40N	7E	4400
Canyon	21A20a	20	40N	8E	5100
Glacier Creek	21A23	9-10	38N	7E	3700
Panorama New	21A26	17	39N	9E	4300
Twin Lakes	21A21a	16	40N	9E	5200
Nook'sack River					
Duck Butte	21A11a	8	36N	8E	3800
Easy Pass	21A7a	19	39N	11E	5200
Jasper Pass	21A6a	17	38N	11E	5400
Marten Lake	21A9a	23	38N	8E	3600
Mount Blum	21A18a	27	38N	10E	5800
Rocky Creek	21A12AP	20	37N	8E	2100
Schreibers Meadow	21A10AP	18	37N	8E	3400
S. F. Thunder Creek	21A14AP	18	37N	9E	2200
Sulphur Creek	21A13	22	37N	8E	1600
Three Mile Creek	21A15	18	36N	9E	1600
Watson Lakes	21A8P	25	37N	9E	4500
OLYMPIC PENINSULA					
Dungeness River					
Deer Park	23B4	1	28N	5W	5200
Morse Creek					
Cox Valley	23B14	31	29N	6W	4500
Elwha River					
Hurricane	23B3	36	29N	7W	4500
LEGEND					
21A7	Snow Course Only				
21A7a	Aerial Marker Only				
21A7a	Snow Course And Aerial Marker				
21A7m	Soil Moisture Station				
21A7m	Snow Course And Precipitation Storage Gage				
21A7b	Precipitation Storage Gage				
21A7Sc	Snow Pillow				

WATER SUPPLY OUTLOOK

State of Washington

April 1, 1982

Many of the snow survey measurements that were taken for the April 1 snow report were made before the heavy, intense storms that occurred at the end of March. Enough were made following the most intense storms to give an indication of their effect to the total water supply picture. In spite of the local intensity, the long range impact on water supply conditions is minimal; one or two percentage points at the most, depending upon the size of the watershed and the major source of the water, i.e., high elevation or low elevation. The end result is the fact that the water supply outlook for the State of Washington remains good. The snowpack improved in some watersheds from that which was measured last month and deteriorated in others. Runoff during the past month was all above normal except for the Similkameen. Rainfall was above normal except on the Cascades where both east and west sides were reported to have sub-normal amounts. As stated last month, there are no foreseeable problem areas.

SNOW COVER

The comparison of snow cover shows that only the Colville and Spokane drainages have less than normal amounts of snow cover as of April 1 -- 22 and 8 percent below average, respectively. This is in the Upper Columbia Basin tributary to Washington. Along the Lower Columbia drainages in Washington, the variation is much greater. The three courses in the Blue Mountains indicate the snowpack in that area to be 29 percent above average; but the one snow course in the Klickitat drainage, near Satus Pass, has only a 42 percent of normal amount of snow. In the Lewis and Cowlitz watersheds, the snow cover is 98 and 107 percent of normal, respectively. Along the west slopes of the Cascades draining into Puget Sound, the average snowpack is slightly less than normal with the Cedar having only 72 percent and the White 109 percent for minimum and maximum areas. In the Olympic Peninsula drainages flowing north, the average snowpack is 3 percent above average.

RESERVOIRS

The above normal runoff of the past month has added to the improved reservoir picture. Of the five irrigation reservoirs in the Yakima basin, only Bumping Lake and Cle Elum have below normal amounts of water in storage. Water is being passed through Bumping because it will readily fill at a later date and Cle Elum is still down due to the fish water releases that were court ordered. All reservoirs will fill with the spring runoff. The possible exception will be Lake Cle Elum. The power reservoirs are all being managed for flood control with scheduled spills and subsequent filling later in the runoff period.

PRECIPITATION

Rainfall across the state and on tributary basins was not as good during March as it was during the previous months, as reported by the National Weather Service. Subnormal amounts occurred on the East Slope Cascades, Northwest Slope Cascades, and Southwest Slope Cascades drainage divisions. For the winter period of November through March, all drainage divisions are still reported to have above normal amounts of rainfall, ranging from 7 percent above for the Northwest Slope Cascades to 24 percent above for the Southeastern Washington drainage division. In March, the most rainfall, percentagewise, fell on the Okanogan drainage division -- 92 percent above normal.

STREAMFLOW

Just like last month, as reported by the Current Records Center of the U. S. Geological Survey, the only stream that had a below normal outflow during the month was the Similkameen River as measured at Nighthawk. This was 26 percent below -- also the same as last month. There were no great amounts this past month, just consistently above normal outflows. The mainstem continues to have excellent outflows with The Dalles reported to have 43 percent above normal flow. Forecasts of spring and summer runoff are all for near normal or above normal amounts. The only below average flows are forecast to be from the Skagit, Green, and Cedar River watersheds and they are less than 10 percent below normal. The best flows are forecast to occur from the Blue Mountains in southeastern Washington. Numerical forecasts can be found following this narrative.

STREAMFLOW FORECASTS - April - 1982

The following summarized runoff forecasts are based principally on mountain snow-cover and on the assumption that precipitation and temperature will be near average from the present time to the end of the forecast period. Appreciable deviations from normal of temperature and/or precipitation will correspondingly modify these forecasts. The forecasts are made as a product of the cooperative efforts of the Soil Conservation Service and the National Weather Service. Streamflow figures for 1981 are preliminary and subject to revision.

Basin, Stream and Station	Forecast Runoff 1982	Seasonal Streamflow in Thousands of Acre-Feet					
		% 15-Yr. Avg.	Fore- cast period	1981	1980	1979	15-Yr. Average 63-77
<u>COLUMBIA BASIN</u>							
<u>COLUMBIA RIVER SYSTEM</u>							
Columbia River	49100	108	Apr-Sept	48531	40816	34484	45510
at Birchbank <u>1/</u>	39200	108	Apr-July	38501	34085	27181	36358
	28300	108	Apr-June	27002	27623	19661	26197
Columbia River	76100	112	Apr-Sept	70303	61016	52769	68026
at Grand Coulee <u>1/</u>	63600	111	Apr-July	58525	52320	44096	57050
	49200	111	Apr-June	44235	43871	35138	44280
Columbia River	84100	114	Apr-Sept	77308	66512	55298	73911
bl. Priest Rapids <u>1/</u>	70900	114	Apr-July	64689	57767	46700	62444
	55300	114	Apr-June	49348	48667	37453	48479
Columbia River	120000	116	Apr-Sept	96997	93170	76843	103477
at The Dalles, OR <u>1/</u>	102000	115	Apr-July	82171	79931	65758	88503
	81900	115	Apr-June	65104	68316	55016	71219
<u>PEND OREILLE RIVER SYSTEM</u>							
Pend Oreille River	18500	118	Apr-Sept	13896	13271	11639	15643
bl. Box Canyon	16900	118	Apr-July	13179	12116	11095	14334
	14500	118	Apr-June	11594	10776	10217	12277
<u>KETTLE RIVER SYSTEM</u>							
Kettle River	2120	115	Apr-Sept	2181	1835	1259	1845
nr. Laurier	1980	113	Apr-July	2039	1747	1216	1753
	1780	112	Apr-June	1711	1603	1132	1587
Colville River	155	116	Apr-Sept		116	63	134
at Kettle Falls	140	114	Apr-July		105	58	123
	130	113	Apr-June		97	55	115

1/ Observed flow corrected for storage in any of the following reservoirs which are above the station: Kootenay Lake, Hungry Horse, Flathead Lake, Pend Oreille Lake, F. D. Roosevelt Lake, Lake Chelan, Coeur d'Alene Lake, Brownlee, Noxon Reservoir and pumpage at F. D. Roosevelt Lake.

Basin, Stream and Station	Forecast Runoff 1982	Seasonal Streamflow in Thousands of Acre-Feet					
		%	Fore-	15-Yr.			
		15-yr. Avg.	cast period	1981	1980	1970	Average 63-77
<u>SPOKANE RIVER SYSTEM</u> **							
Spokane River	3270	112	Apr-Sept	2238	2214	2809	2910
at Post Falls, ID <u>2/</u>	3060	112	Apr-July	2145	2046	2757	2733
	2910	112	Apr-June	1960	1904	2678	2600
<u>OKANOGAN RIVER SYSTEM</u>							
Similkameen River	1620	107	Apr-Sept	1241	1479	872	1517
nr.Nighthawk	1495	106	Apr-July	1118	1391	812	1417
	1300	109	Apr-June	930	1247	728	1192
Okanogan River	1800	105	Apr-Sept		1551	909	1718
nr. Tonasket	1660	106	Apr-July	1363	1423	825	1564
	1395	117	Apr-June	1090	1240	730	1304
<u>METHOW RIVER SYSTEM</u>							
Methow River	1210	120	Apr-Sept		996	478	1011
nr. Pateros	1130	120	Apr-July		934	432	937
	950	120	Apr-June		811	382	791
<u>CHELAN RIVER SYSTEM</u>							
Chelan River	1370	111	Apr-Sept	917	1120	753	1238
at Chelan <u>3/</u>	1210	112	Apr-July	812	1020	662	1080
	935	112	Apr-June	647	859	553	834
Stehekin River	1020	116	Apr-Sept			566	883
at Stehekin	860	116	Apr-July			477	744
	650	117	Apr-June			387	557
Entiat River	300	125	Apr-Sept		216	134	241
nr. Ardenvoir	270	124	Apr-July		200	120	218
	210	121	Apr-June		172	104	174
<u>WENATCHEE RIVER SYSTEM</u>							
Wenatchee River	1560	120	Apr-Sept			893	1297
at Plain	1400	121	Apr-July			812	1156
	1060	117	Apr-June			704	903
Wenatchee River	2110	119	Apr-Sept	1249	1516	1165	1767
at Peshastin	1850	117	Apr-July	1148	1399	1074	1586
	1490	119	Apr-June	956	1208	938	1250
Stemilt Basin	135*		May-Sept				138*
nr. Wenatchee							
Icicle Creek	395	106	Apr-Sept				371
nr. Leavenworth	360	105	Apr-July				342
	295	106	Apr-June				279

* Thousands of Miners' Inches.

** Forecasts made by Jack A. Wilson, Soil Conservation Service, Boise, Idaho.

2/ Observed flow corrected for storage in Coeur d'Alene Lake and diversions by Spokane valley farms Company and Rathdrum Prairie Canals.

3/ Observed flow corrected for storage in Lake Chelan.

Basin, Stream and Station	Forecast Runoff 1982	Seasonal Streamflow in Thousands of Acre-Feet					
		% 15-yr. Avg.	Fore cast period	1981	1980	1979	15-yr. Average 63-77
<u>YAKIMA RIVER SYSTEM</u>							
Yakima River	150	104	Apr-Sept	95	115	124	144
nr. martin <u>4/</u>	140	105	Apr-July	82	103	114	133
	120	105	Apr-June	73	95	101	114
Yakima River	1100	113	Apr-Sept	700	792	714	975
at Cle Elum <u>5/</u>	980	111	Apr-July	643	716	683	882
	820	109	Apr-June	563	646	599	750
Yakima River	2400	111	Apr-Sept	1194	1833	1388	2168
nr. Parker <u>6/</u>	2170	111	Apr-July	1059	1733	1287	1954
	1860	110	Apr-June	961	1610	1179	1693
Kachess River	140	111	Apr-Sept	81	111	101	126
nr. Easton <u>7/</u>	135	113	Apr-July	72	105	95	119
	115	112	Apr-June	66	91	88	103
Cle Elum River	535	112	Apr-Sept	313		348	479
nr. Roslyn <u>8/</u>	490	113	Apr-July	282	350	326	435
	400	112	Apr-June	244	314	292	358
Bumping River	155	106	Apr-Sept	78	129	99	146
nr. Nile <u>9/</u>	140	106	Apr-July	70	120	92	132
	110	104	Apr-June	63	111	82	106
American River	135	106	Apr-Sept			81	127
nr. Nile	120	103	Apr-July			74	116
	100	105	Apr-June			66	95
Tieton River	275	109	Apr-Sept	148	224	179	252
at Tieton Dam <u>10/</u>	230	108	Apr-July	131	192	148	212
	180	107	Apr-June	108	166	120	168
Naches River	965	108	Apr-Sept	419	729	574	893
nr. Naches <u>11/</u>	860	107	Apr-July	380	694	528	806
	720	106	Apr-June	339	638	478	678
Ahtanum Creek	50	106	Apr-Sept				47
nr. Tampico <u>12/</u>	45	107	Apr-July				42
	40	108	Apr-June				37

4/ Observed flow corrected for storage in Lake Keechelus.

5/ Observed flow corrected for storage in Keechelus, Kachess, and Cle Elum Lakes and diversion by Kittitas Canal.

6/ Observed flow corrected for storage in Keechelus, Kachess, Cle Elum, Bumping, and Rimrock Lakes and diversions by Roza, Union Gap, New Reservation, Old Reservation, and Sunnyside Canals.

7/ Observed flow corrected for storage in Lake Kachess.

8/ Observed flow corrected for storage in Lake Cle Elum.

9/ Observed flow corrected for storage in Bumping Lake.

10/ Observed flow corrected for storage in Rimrock Lake.

11/ Observed flow corrected for storage in Bumping and Rimrock Lakes and diversions by Tieton, Selah Valley, Wapatox Canals, and City of Yakima.

12/ Observed flow of North and South Forks (Combined).

Basin, Stream and Station	Forecast Runoff 1982	Seasonal Streamflow in Thousands of Acre-Feet					
		% 15-yr. Avg.	Fore- cast Period	1981	1980	1979	15-yr. Average 63-77
<u>LOWER COLUMBIA RIVER SYSTEM</u>							
Mill Creek	21.9	125	Apr-Sept			22.37	17.50
at Walla Walla	21.7	125	Apr-July			22.25	17.33
	21.4	125	Apr-June			22.14	17.15
Lewis River	1500	116	Apr-Sept	1096	1001	962	1298
at Ariel <u>13/</u>	1300	115	Apr-July	971	883	830	1128
	1150	116	Apr-June	865	798	749	992
Cowlitz River	2350	111	Apr-Sept		1626	1563	2126
bl. Mayfield Dam	2040	110	Apr-July		1432	1367	1854
	1710	110	Apr-June		1275	1203	1553
Cowlitz River	2950	107	Apr-Sept	2390	1976	2046	2766
at Castle Rock <u>14/</u>	2550	106	Apr-July	2125	1852	1792	2401
	2150	106	Apr-June	1875	1649	1574	2029
<u>OLYMPIC PENINSULA</u>							
<u>DUNGENESS RIVER SYSTEM</u>							
Dungeness River	180	113	Apr-Sept			110	160
nr. Sequim	145	112	Apr-July			90	130
	105	109	Apr-June			71	96
<u>ELWHA RIVER SYSTEM</u>							
Elwha River	610	110	Apr-Sept			404	553
nr. Port Angeles	500	110	Apr-July			330	454
<u>PUGET SOUND</u>							
<u>SKAGIT RIVER SYSTEM</u>							
Skagit River	2190	99	Apr-Aug			1785	2212
at Newhalem <u>15/</u>	2310	98	Apr-Sept			1648	2356
	1920	97	Apr-July			1358	1972
	1440	97	Apr-June			1102	1485
<u>GREEN RIVER SYSTEM</u>							
Green River							
bl. Howard Hanson Dam <u>16/</u>	285	90	Apr-Sept				316
	255	90	Apr-July				284
	230	90	Apr-June				256
<u>CEDAR RIVER SYSTEM</u>							
Cedar River	90	97	Apr-Sept				93
nr. Cedar Falls							

13/ Observed flow corrected for storage in Lake Merwin, Yale, and Swift Reservoirs.

14/ Observed flow corrected for storage in Mayfield Reservoir.

15/ Observed flow corrected for storage in Diablo, Ross, and Gorge Reservoirs.

16/ Observed flow corrected for storage in Howard Hanson Dam.

RESERVOIR STORAGE - 1000 Acre Feet

BASIN OR STREAM	RESERVOIR	USABLE 1/ CAPACITY	Measured April 1			
			1982	1981	1980	Normal*
COLUMBIA						
Spokane	Coeur d'Alene Lake	225.1	166.7	170.4	87.1	121.6
Columbia	Franklin D. Roosevelt Lake	5232.0	1094.0	4224.7	1374.8	1260.0
Columbia	Banks Lake	714.9	682.9	685.5	688.2	590.8
Okanogan	Conconully Reservoir	13.0	10.7	8.6	4.0	7.2
Okanogan	Conconully Lake	10.5	9.1	10.4	8.3	7.5
Chelan	Lake Chelan	676.1	208.3	408.9	92.0	184.6
YAKIMA						
Yakima	Keechelus Lake	157.8	142.5	156.9	94.4	108.8
Kachess	Kachess Lake	239.0	203.6	217.2	92.2	189.8
Cle Elum	Lake Cle Elum	436.9	148.5	304.2	363.4	292.1
Bumping	Bumping Lake	33.7	5.9	33.1	27.4	8.6
Tieton	Rimrock Lake	198.0	157.2	197.3	96.5	142.2
PUGET SOUND						
Skagit	Ross Reservoir	1404.1	701.5	1188.8	511.3	754.4
Skagit	Diablo Reservoir	90.6	86.1	87.5	87.1	85.7
Skagit	Gorge Reservoir	9.8	7.8	8.3	7.8	8.0

1/ Based on Active Storage

* 15-yr. Average 1963-1977

COMPARISON OF SNOW COVER WITH THAT OF PREVIOUS YEARS

The following tabulation of Washington stream basins presents the water content of the snow about April 1, 1982, as percent of the same date in 1981 and 1980 and average of record.

Tributary Basin	No. of Courses Average	1982 Snow Water Expressed as percent of		
		1981	1980	1963-77 Avg.

UPPER COLUMBIA BASIN

Pend Oreille	17	306	126	102
Kettle	16	169	118	104
Colville	4	350	86	78
Spokane	15	553	151	92
Okanogan	35	236	134	110
Methow	6	184	129	110
Chelan	4	200	130	105
Entiat	10	242	147	110
Wenatchee	10	568	128	106
Yakima	26	484	126	102
Ahtanum	2	254	103	108

LOWER COLUMBIA BASIN

Mill Creek	3	1473	146	129
Klickitat	1	-	61	42
Lewis	4	662	-	98
Cowlitz	3	485	127	107

PUGET SOUND

White	3	230	141	109
Green	7	813	127	94
Cedar	2	-	147	72
Snoqualmie	2	870	152	99
Skykomish	2	459	130	103
Skagit	15	687	165	98

OLYMPIC PENINSULA

Elwha	1	904	236	94
Dungeness	1	389	159	109
Morse Creek	1	433	167	107

PRECIPITATION 1/
Division Average Observations and Departures

Drainage Divisions	FALL		WINTER	
	Sept-Oct Observed	1981 <u>2/</u> Departure	Nov. 1981 - Mar. 1982 Observed	Departure <u>2/</u>
Columbia in Canada	5.17	+0.15	17.05	+1.54
Pend Oreille - Spokane	3.56	-0.48	19.70	+2.15
Northeastern Washington	3.28	+0.80	10.12	+0.72
Southeastern Washington	3.03	+0.52	12.95	+2.52
East Slope Cascades	4.87	+0.12	32.22	+4.69
North Central Washington	2.61	+1.02	7.28	+0.74
Northwest Slope Cascades	13.88	+0.67	59.27	+3.88
Southwest Slope Cascades	9.98	+1.30	45.31	+3.67

Northeastern Washington	- Lower Spokane, Colville, Sanpoil, and Lower Kettle Drainages.
Southeastern Washington	- Touchet, Tucannon, and Palouse Drainages.
East Slope Cascades	- Yakima, Wenatchee and Chelan Drainages.
North Central Washington	- Methow and Okanogan Drainages.
Northwest Slope Cascades	- Puget Sound Drainages.
Southwest Slope Cascades	- Lower Columbia Drainages.

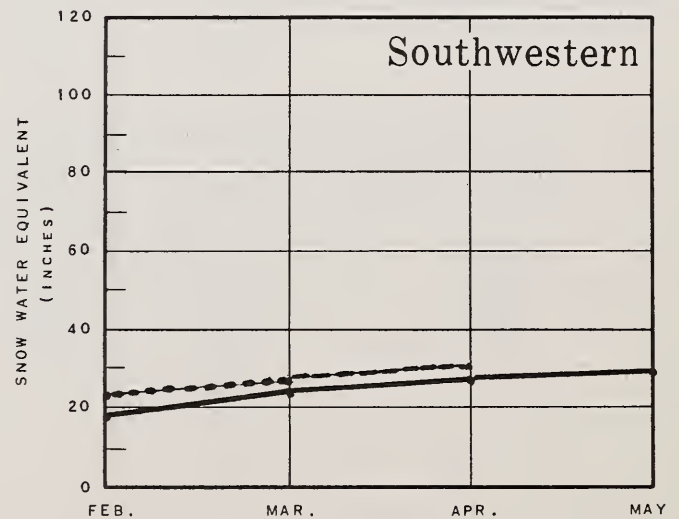
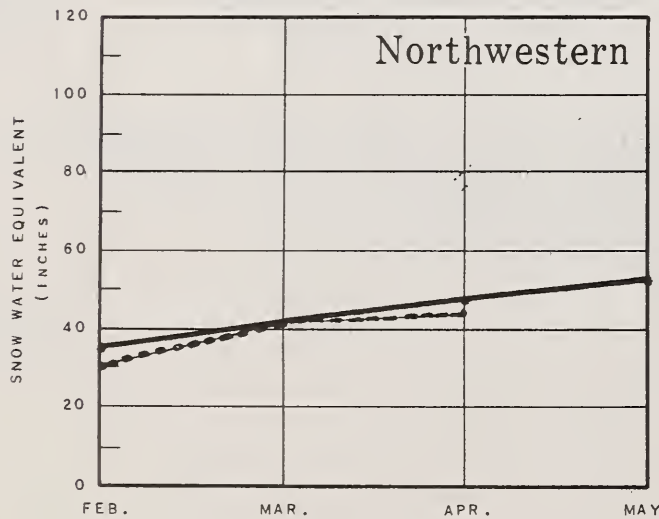
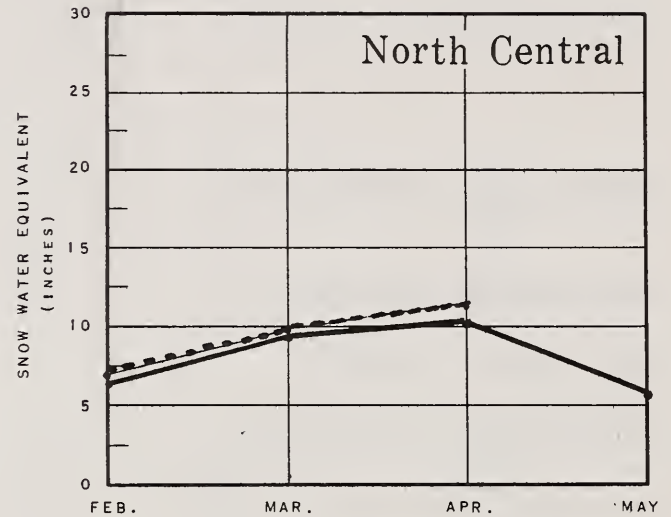
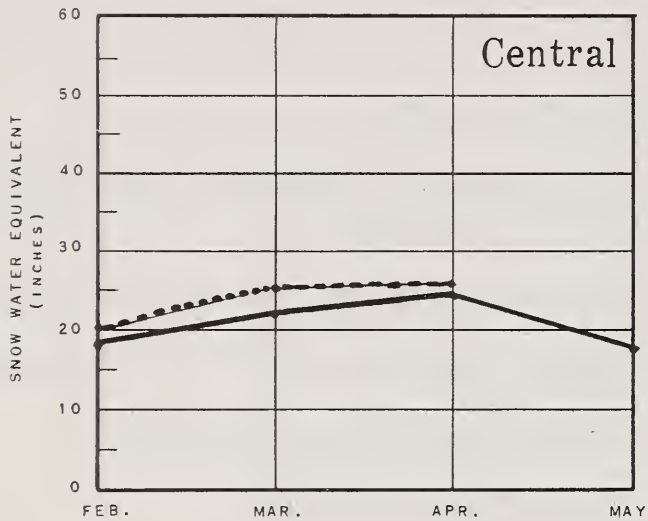
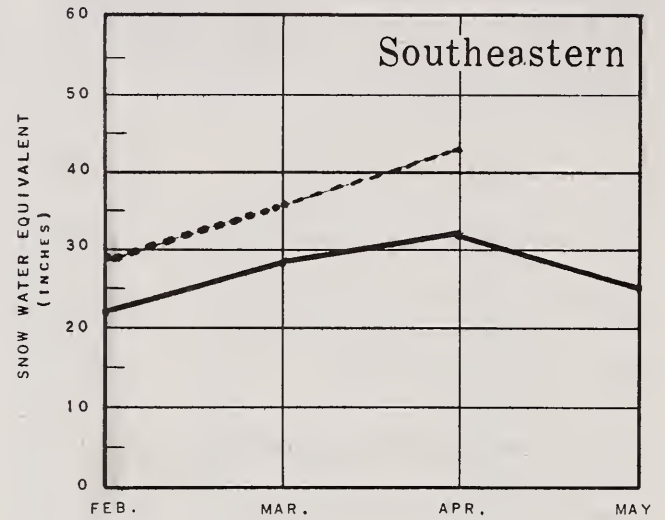
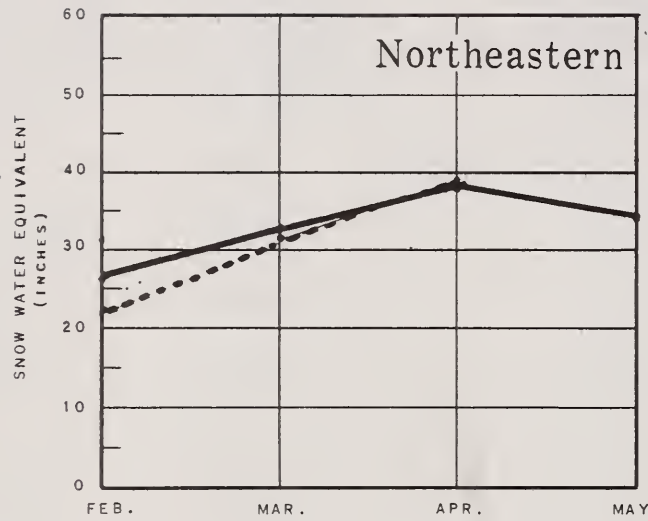
1/ - Preliminary analysis by National Weather Service from data furnished by Meteorological Services of Canada and the National Weather Service.

2/ - Departure from 15-year (1958-72) drainage division average.

WASHINGTON SNOW COVER

1982

DRAINAGE AREAS



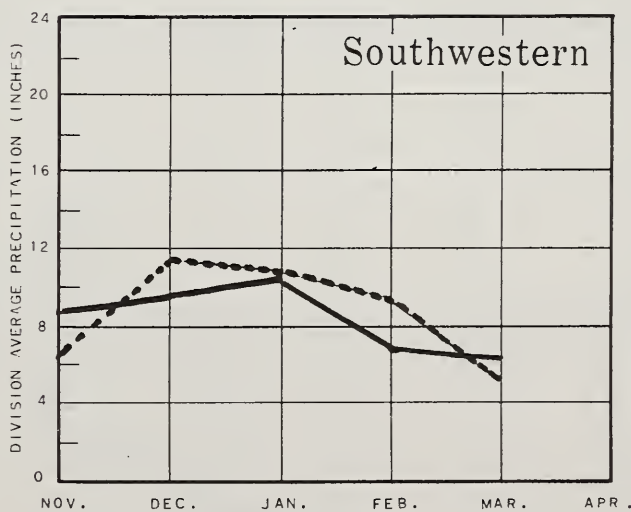
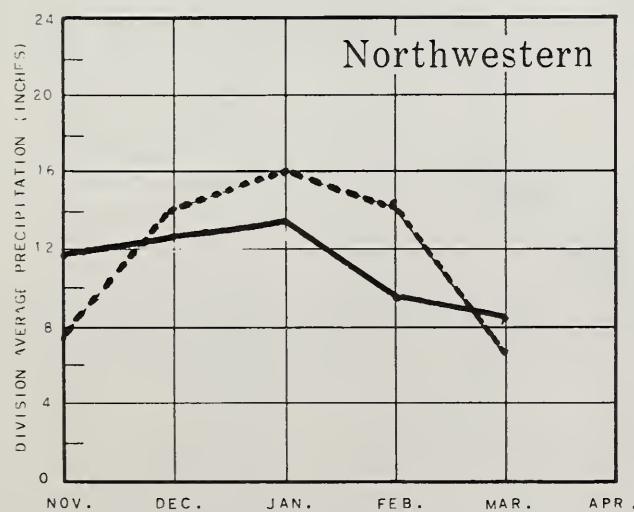
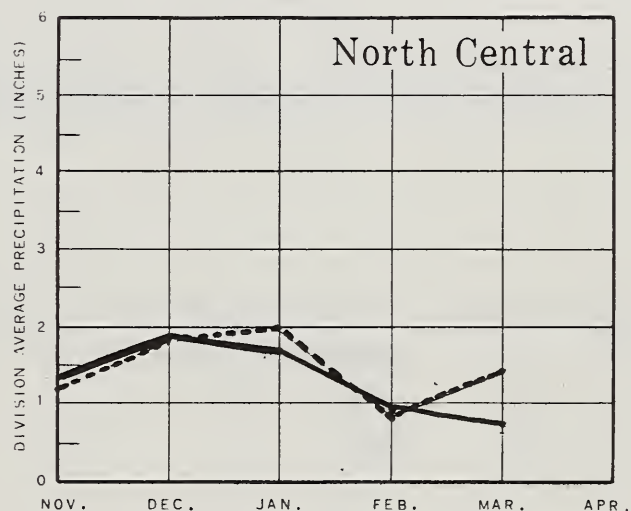
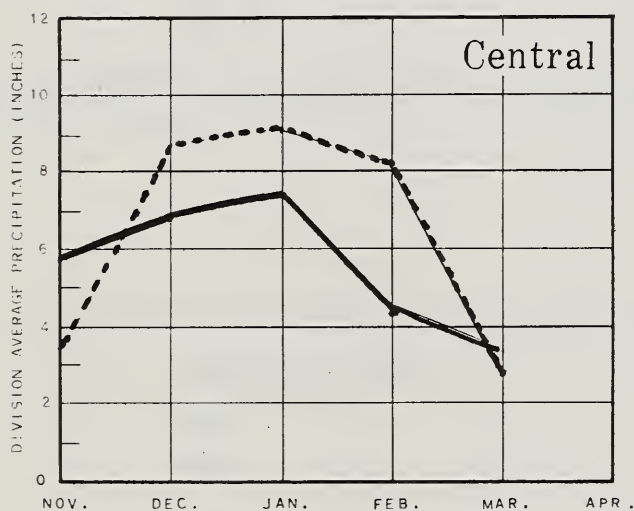
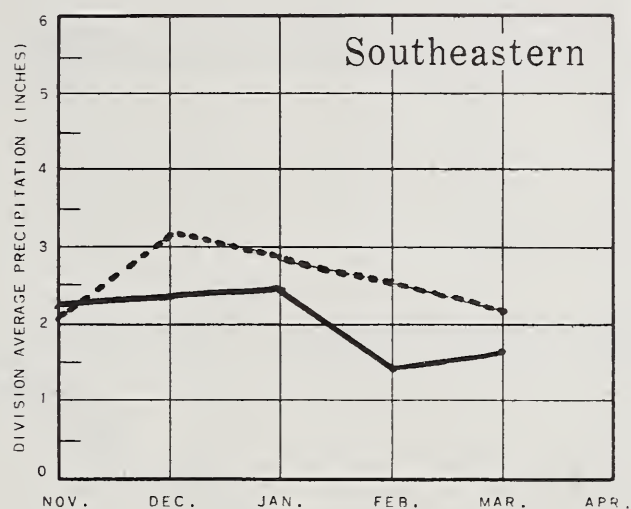
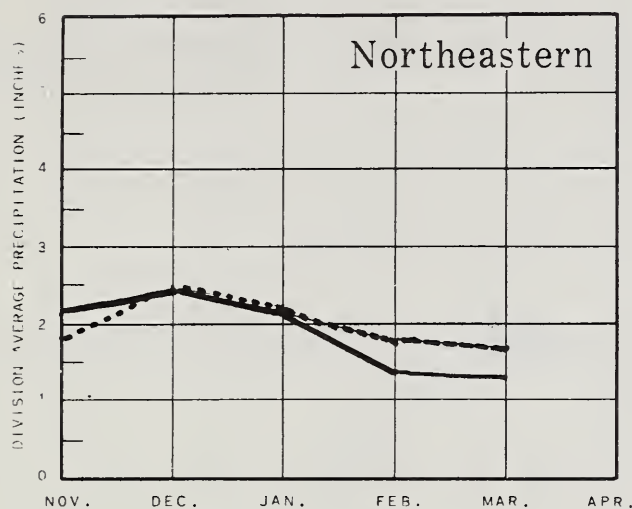
Average ———
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Selected Snow Survey Courses by Soil Conservation Service

WASHINGTON VALLEY PRECIPITATION

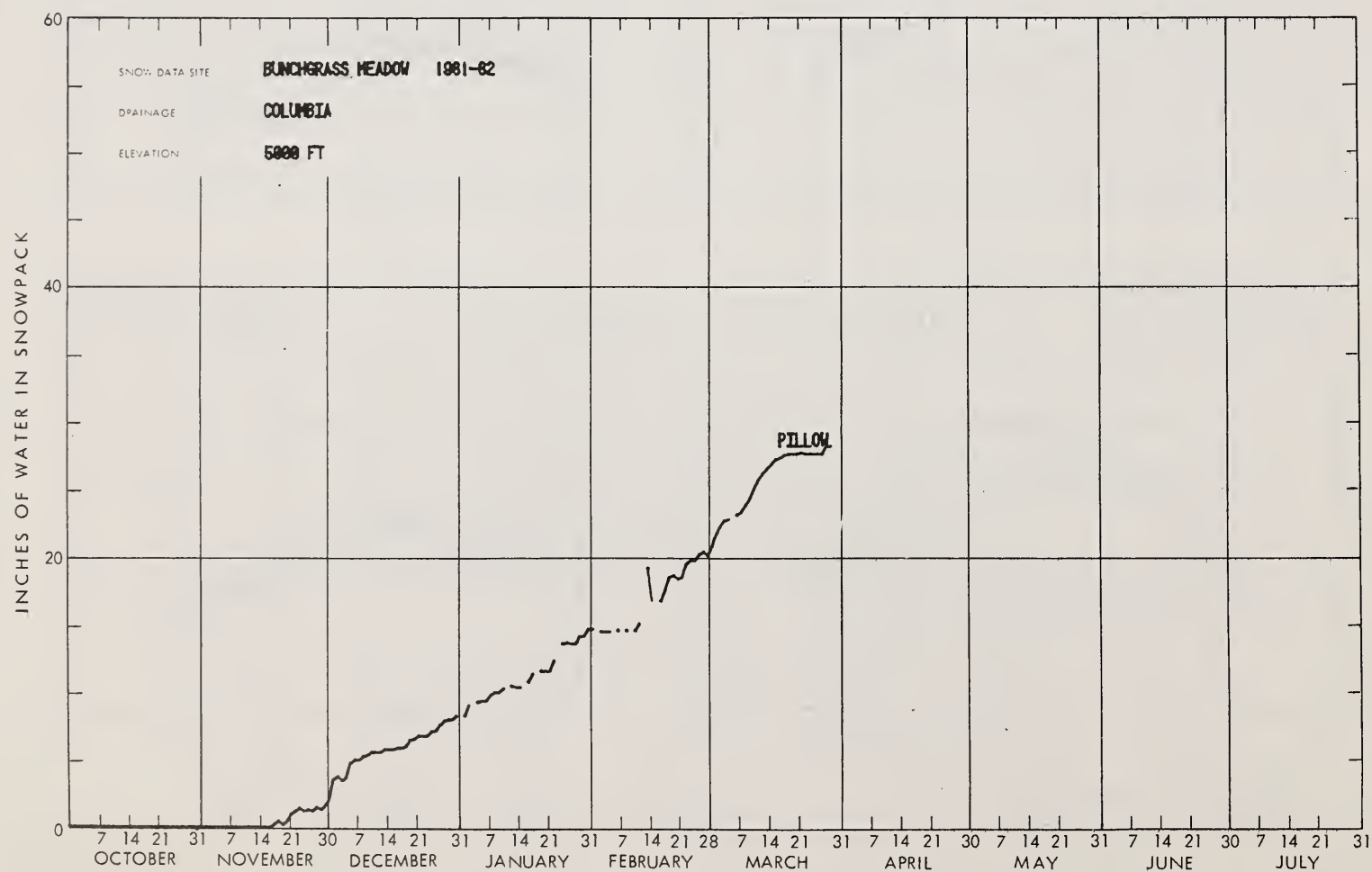
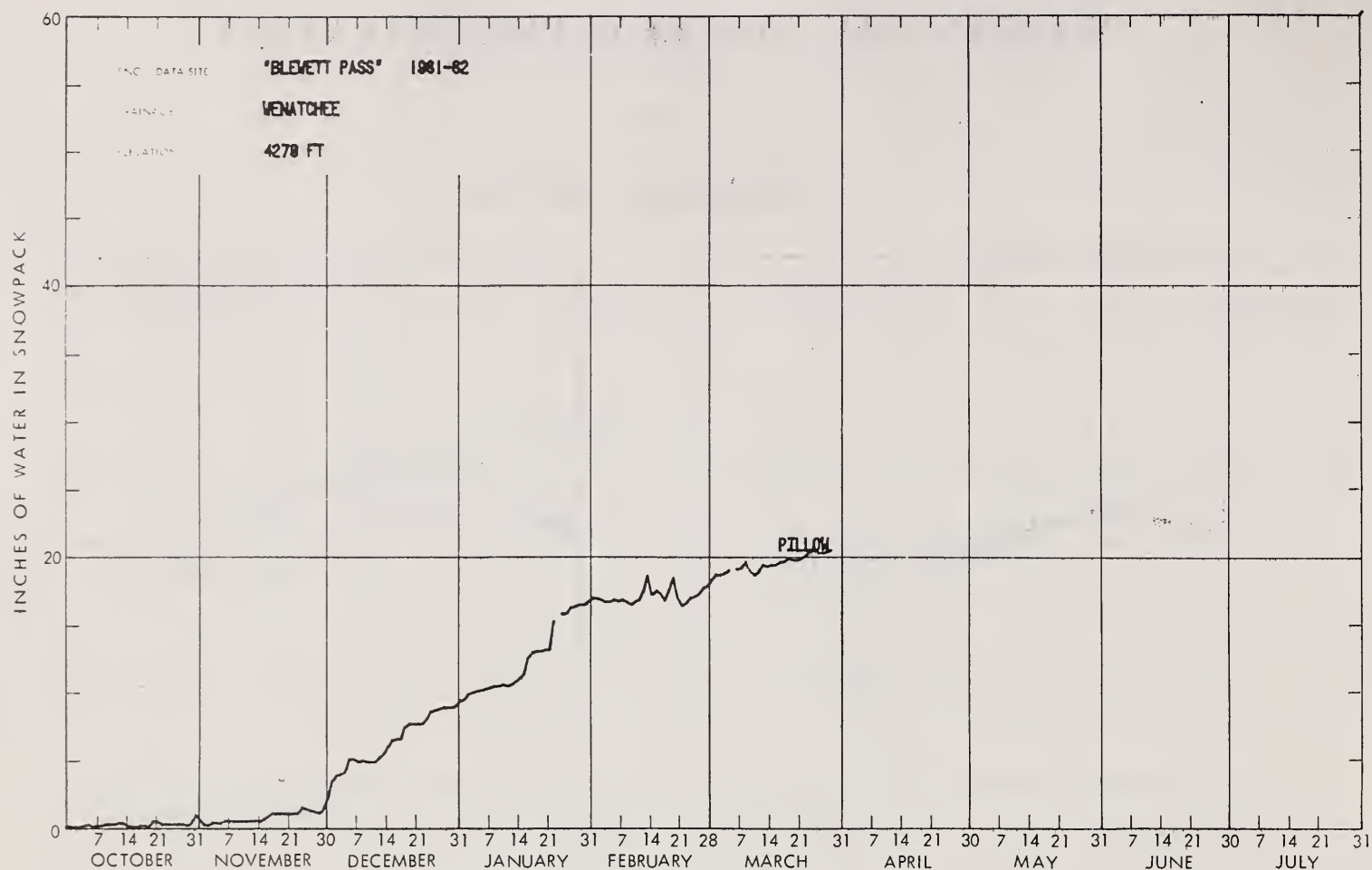
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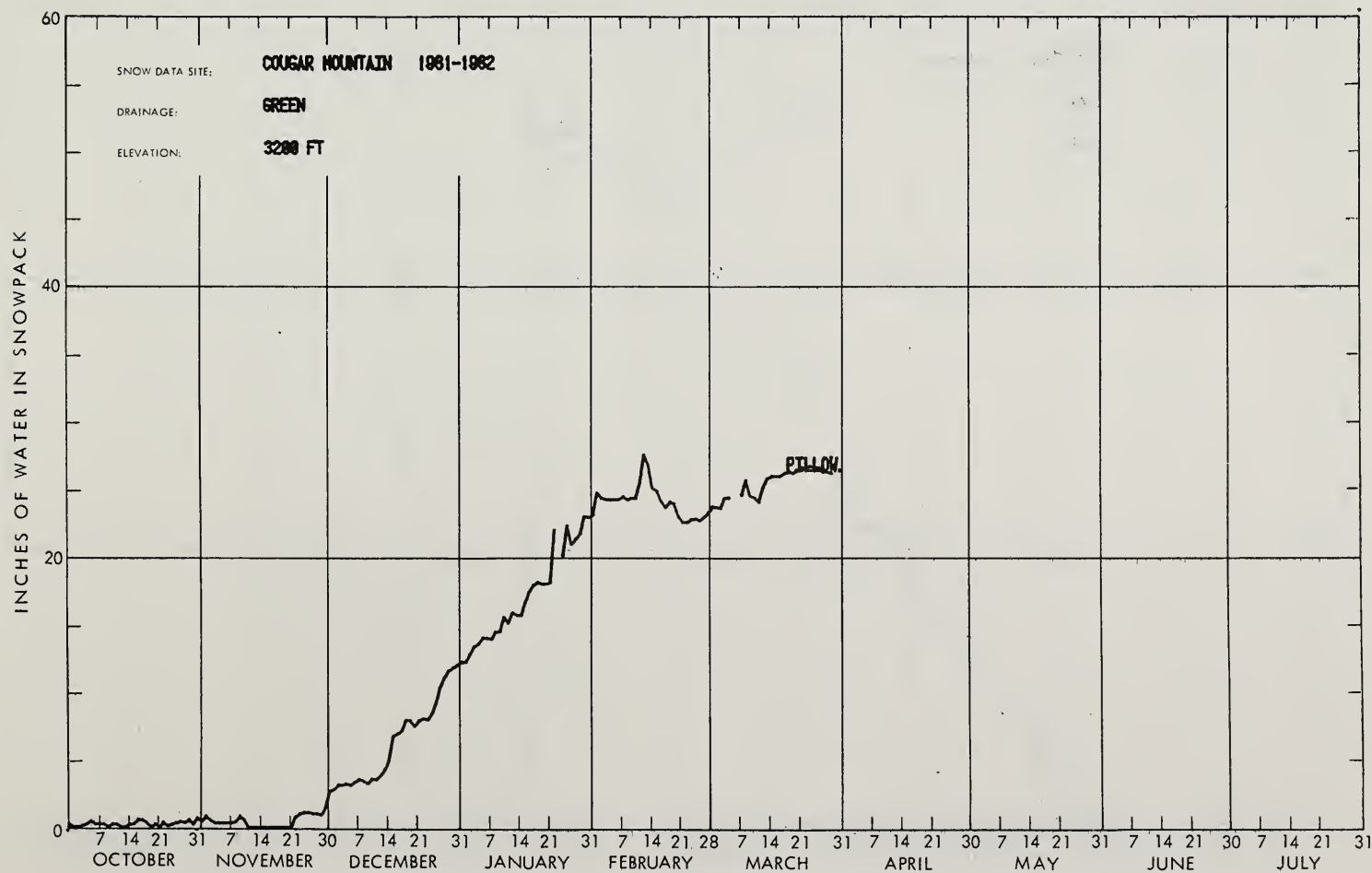
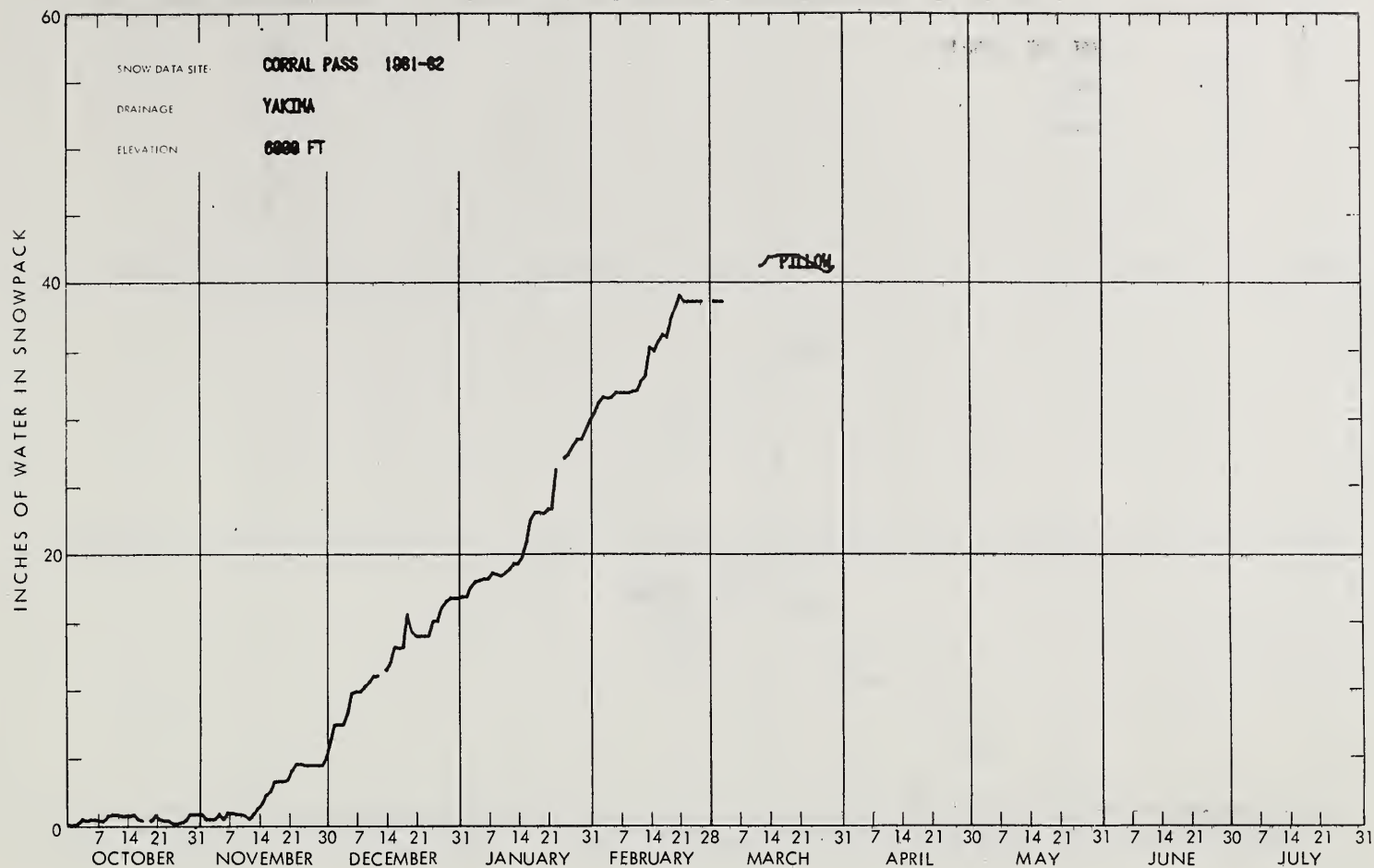
DRAINAGE AREAS

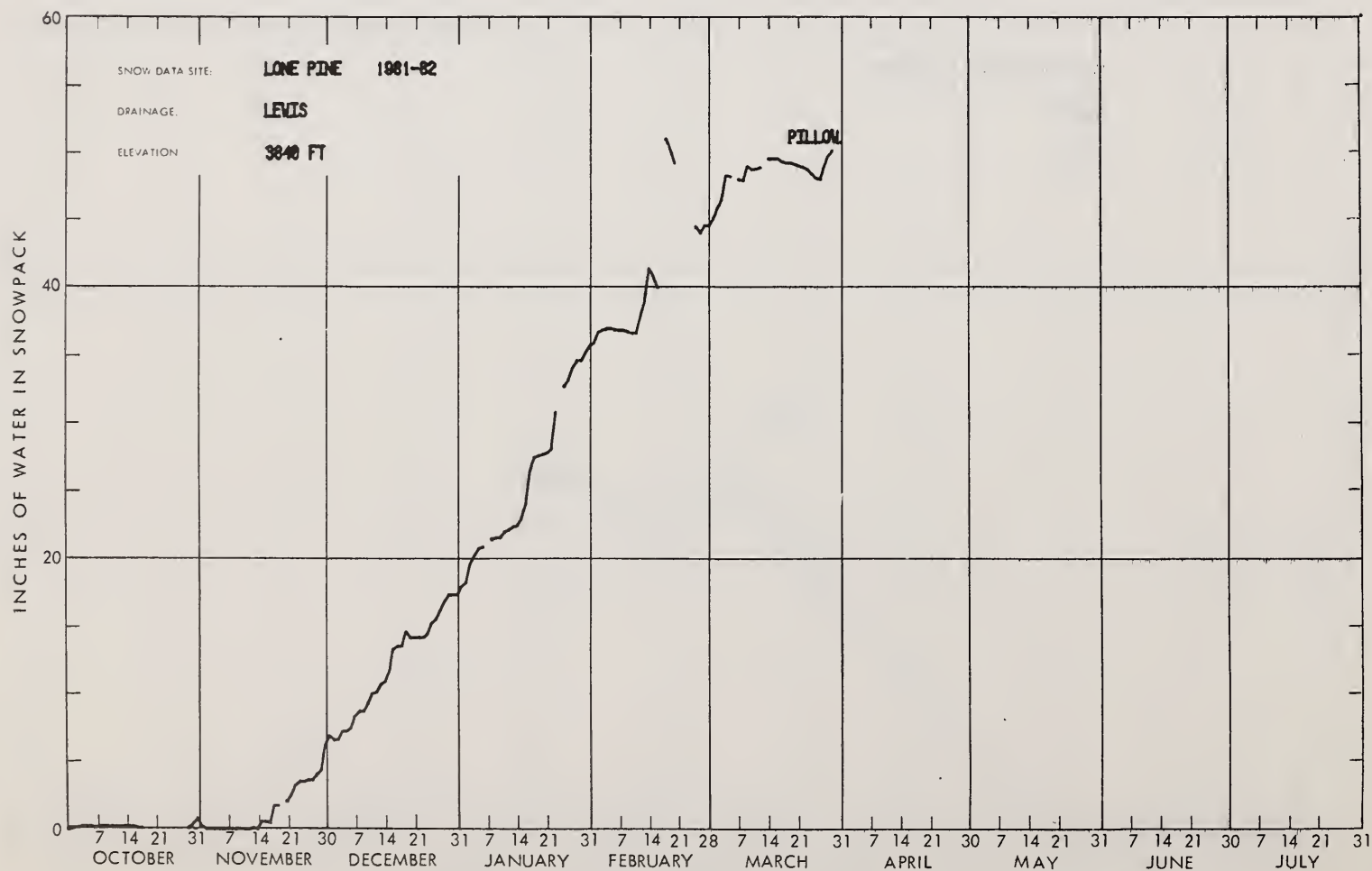
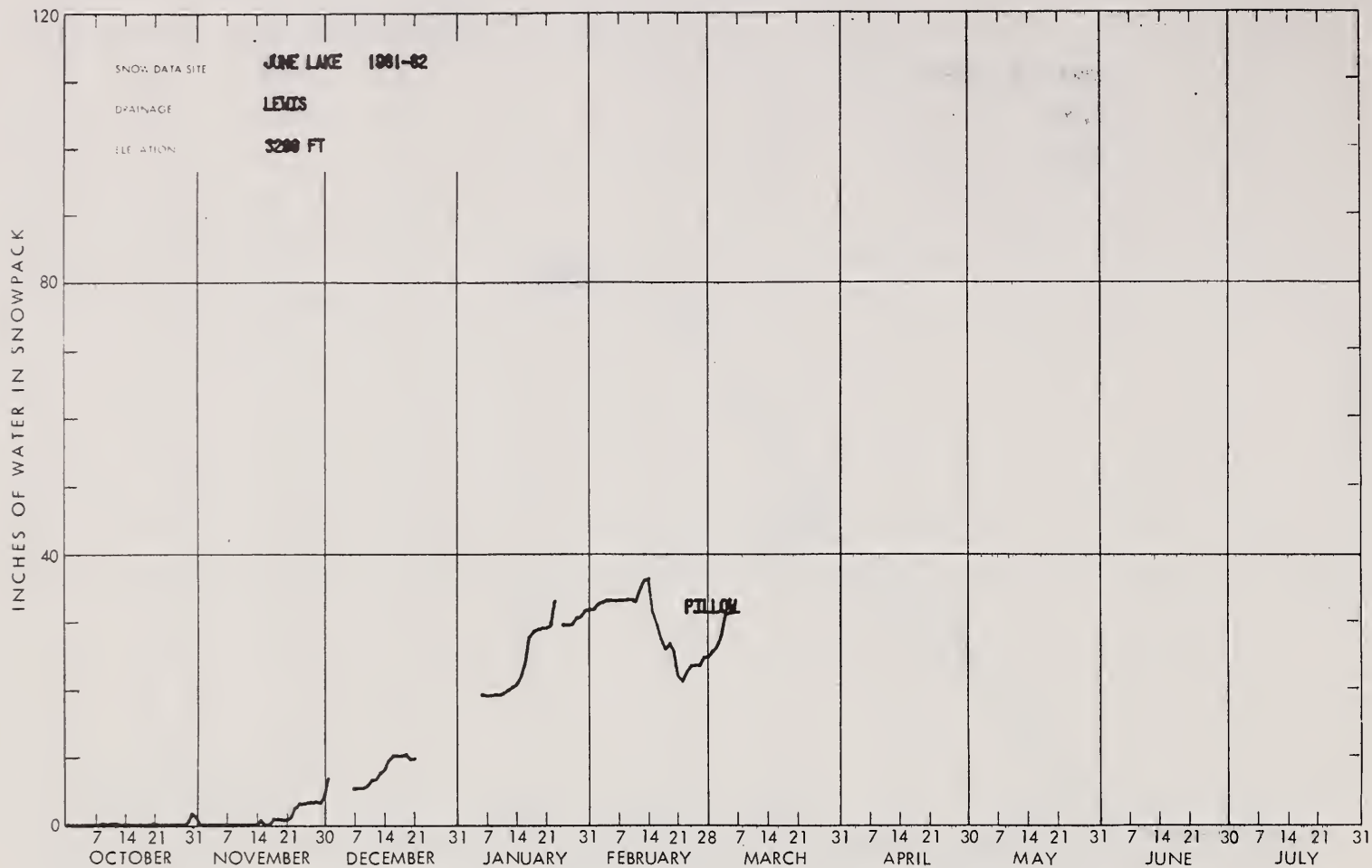


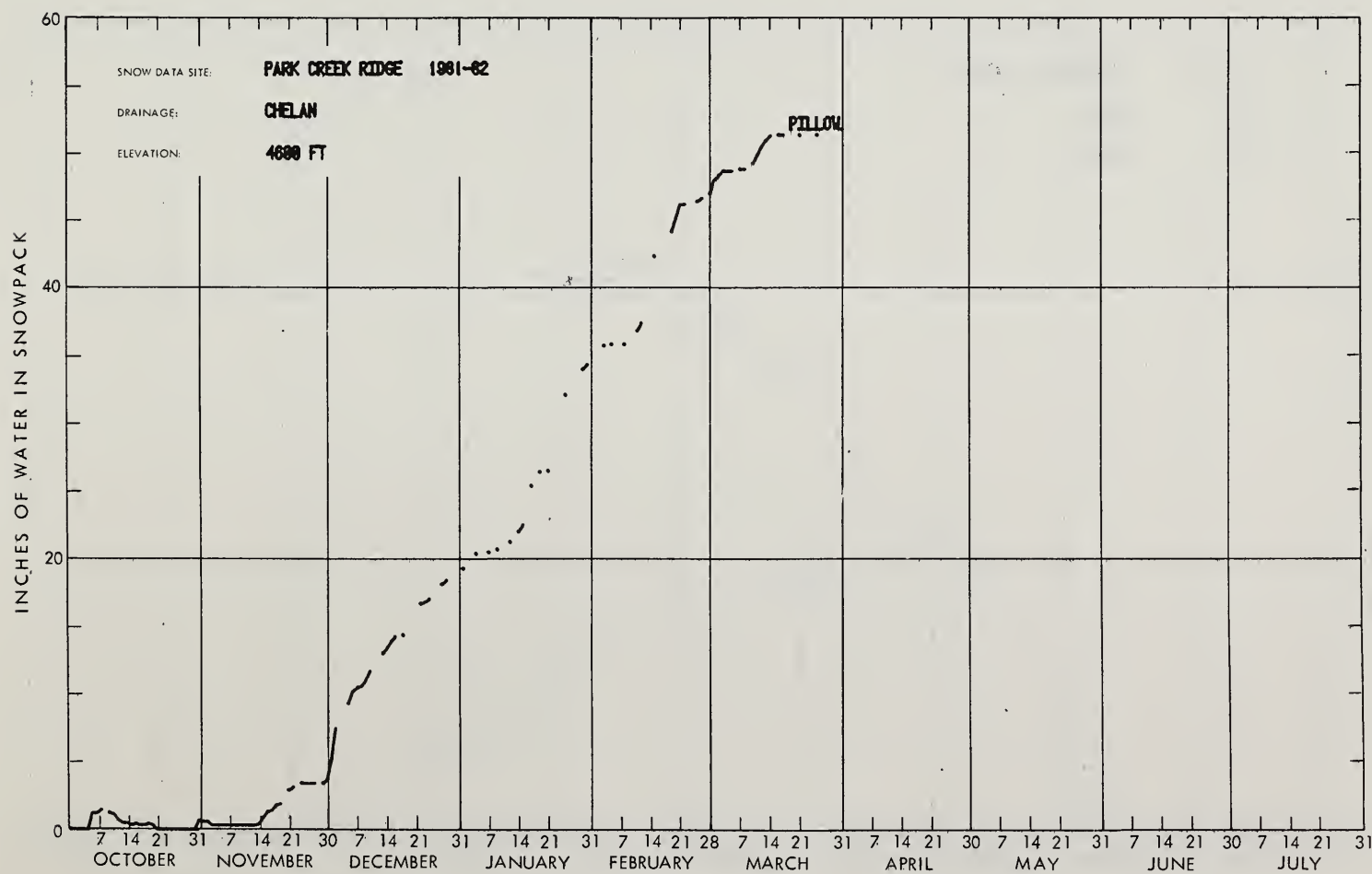
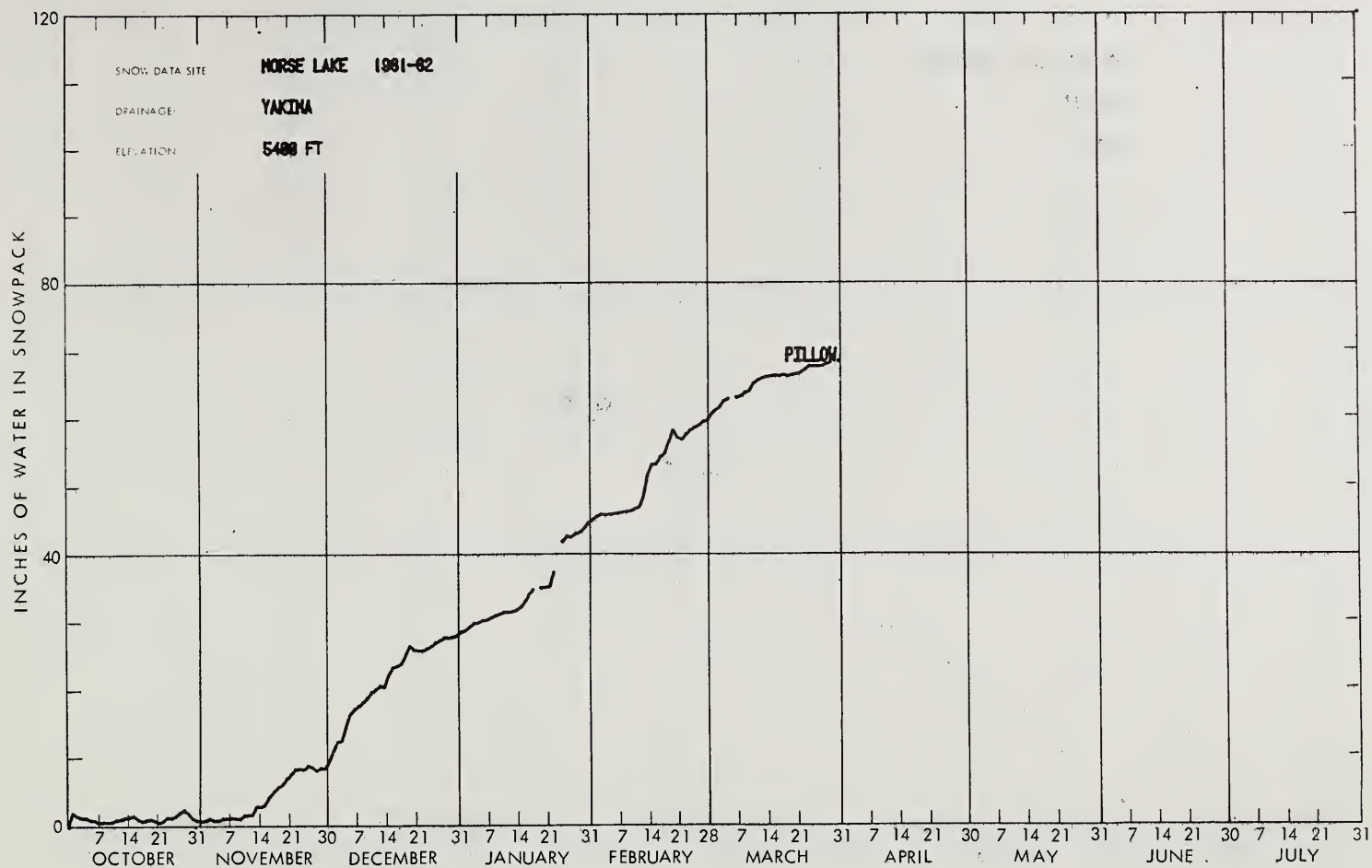
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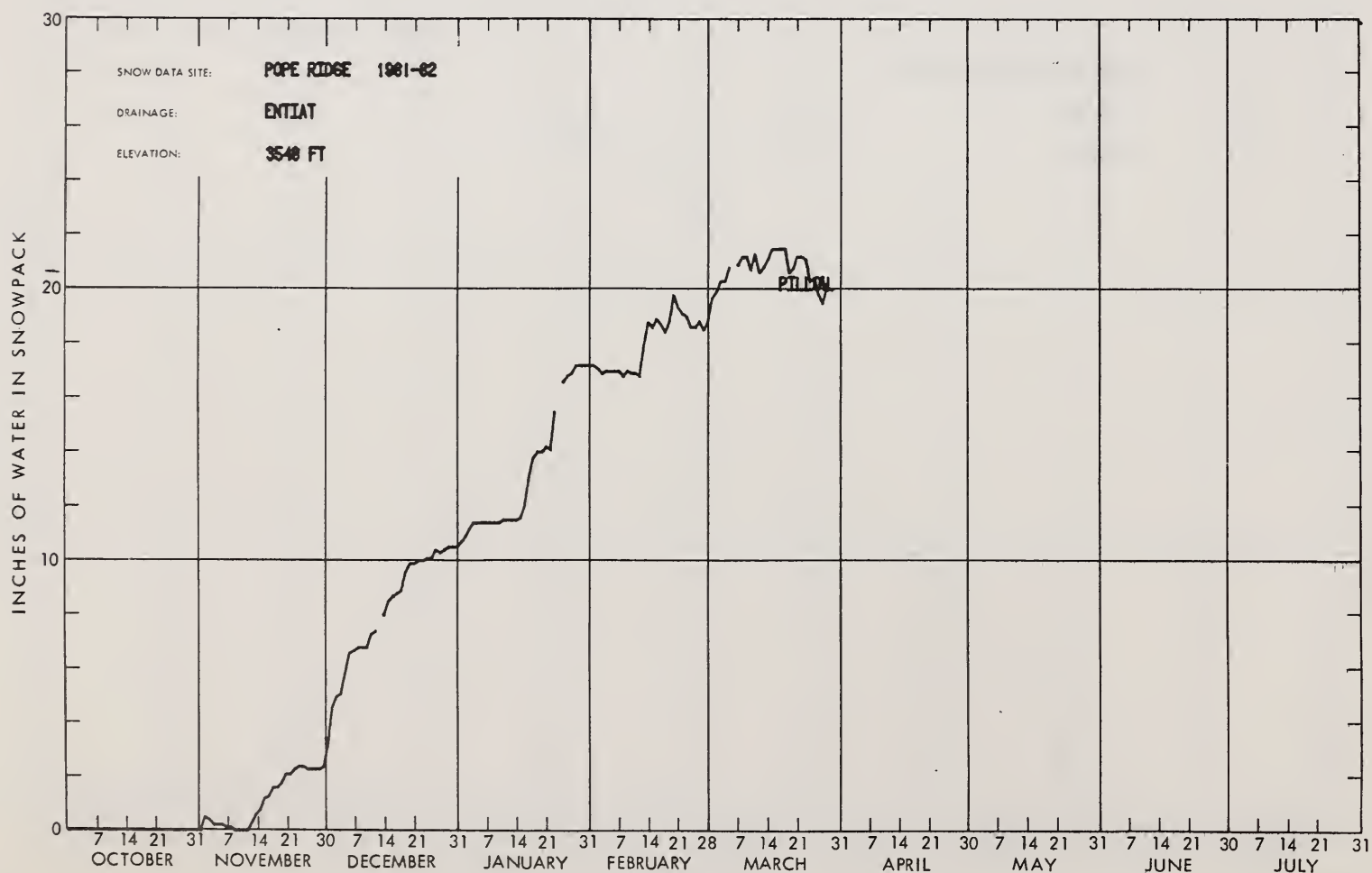
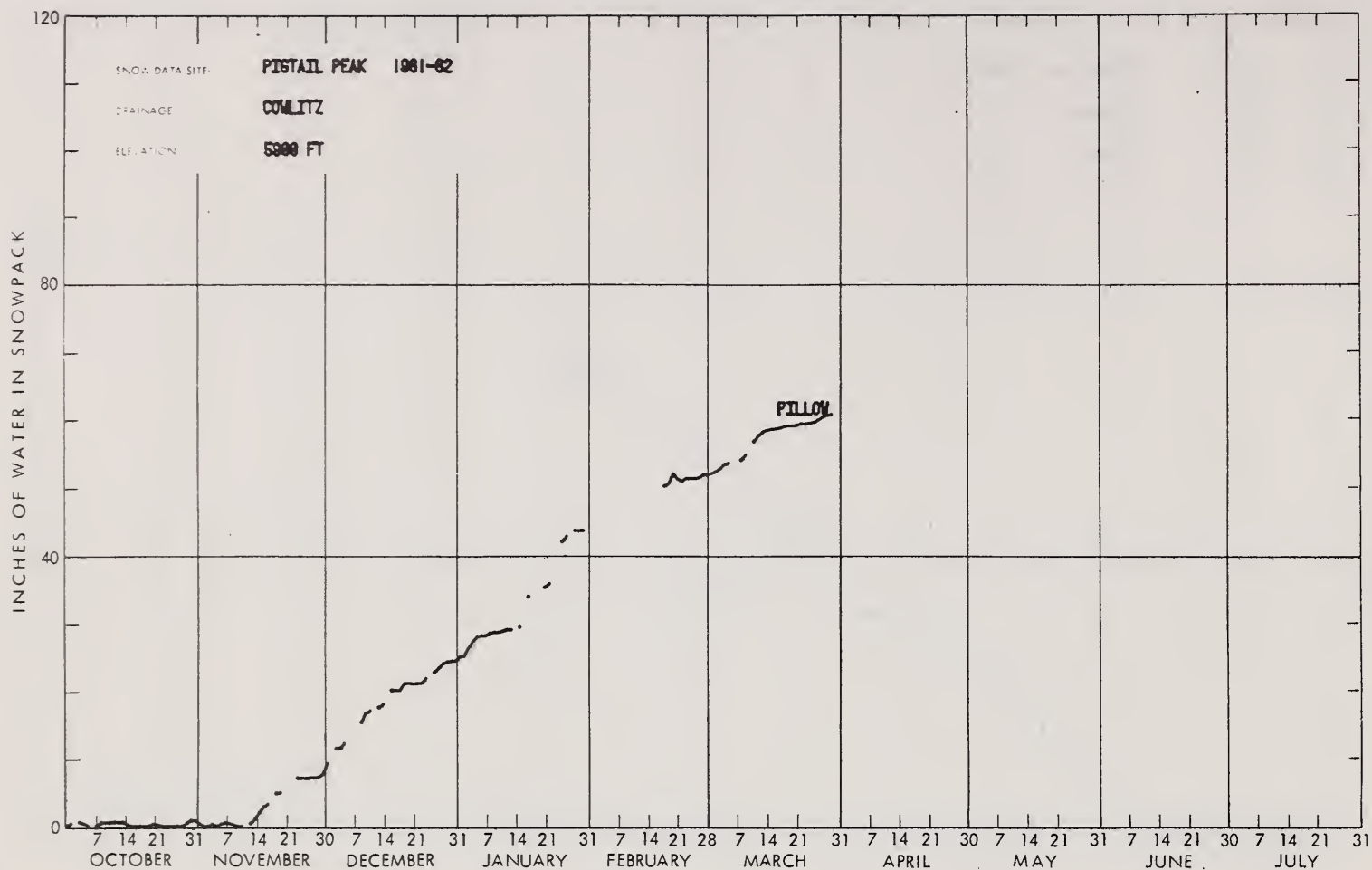
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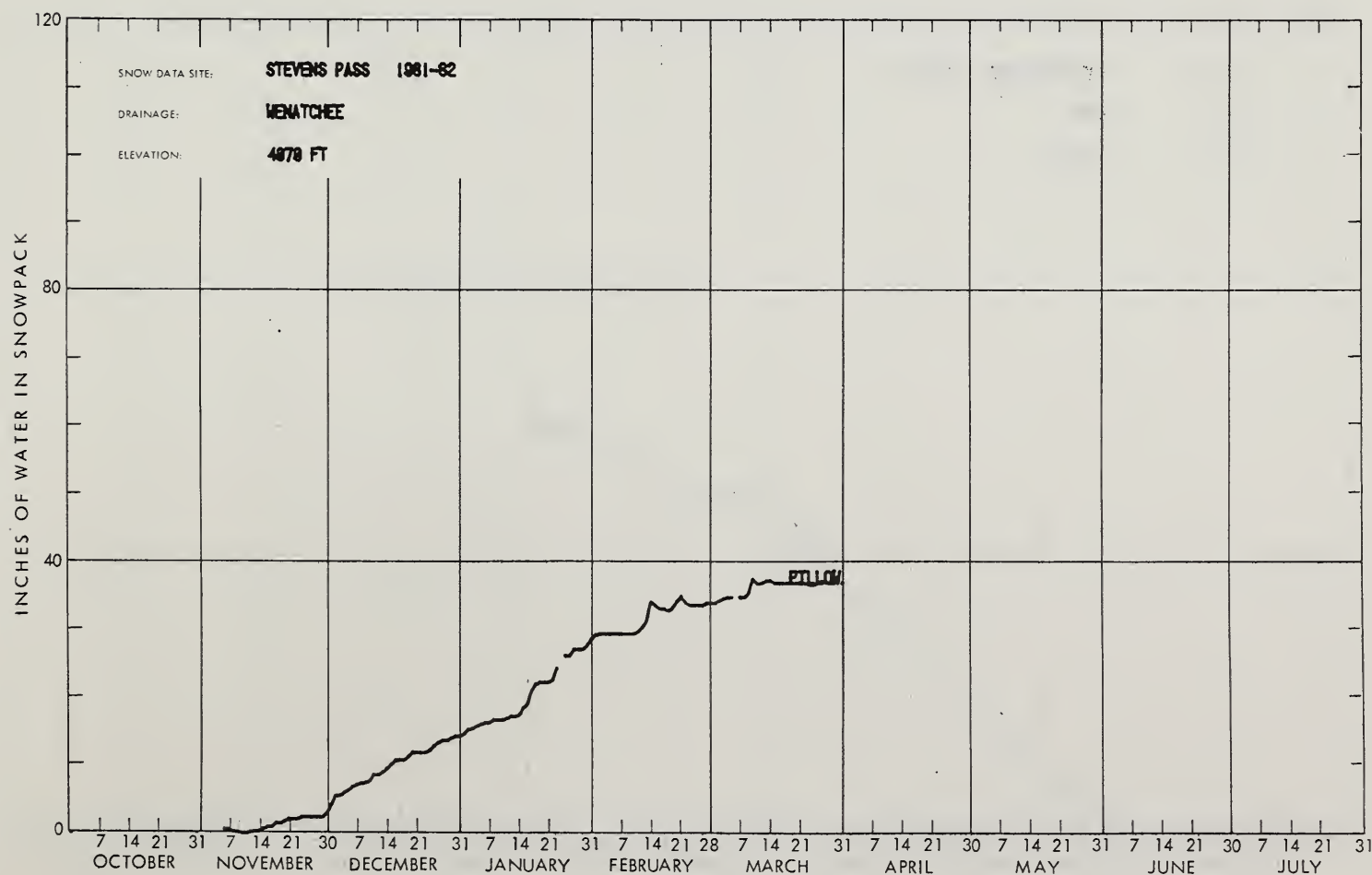
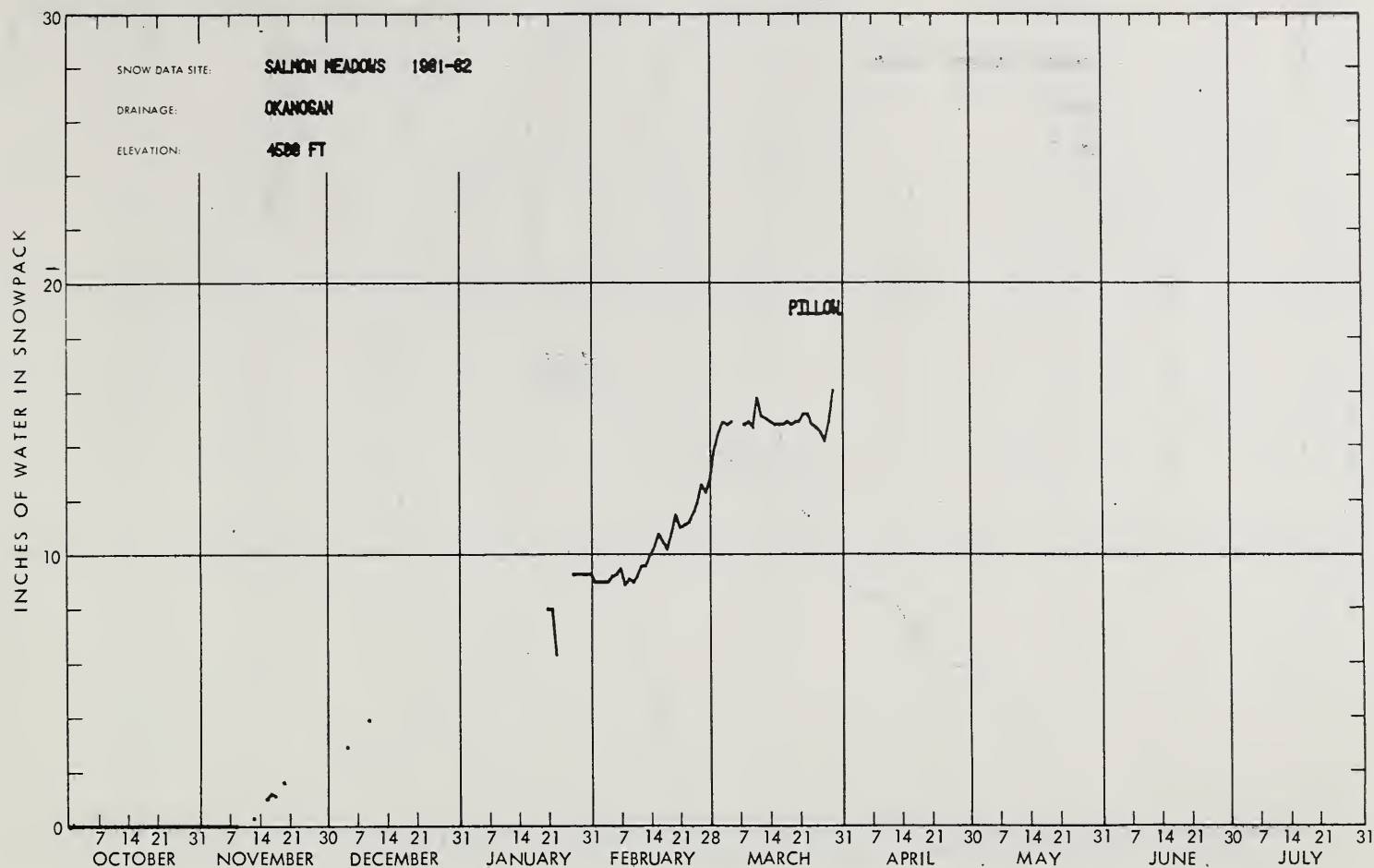


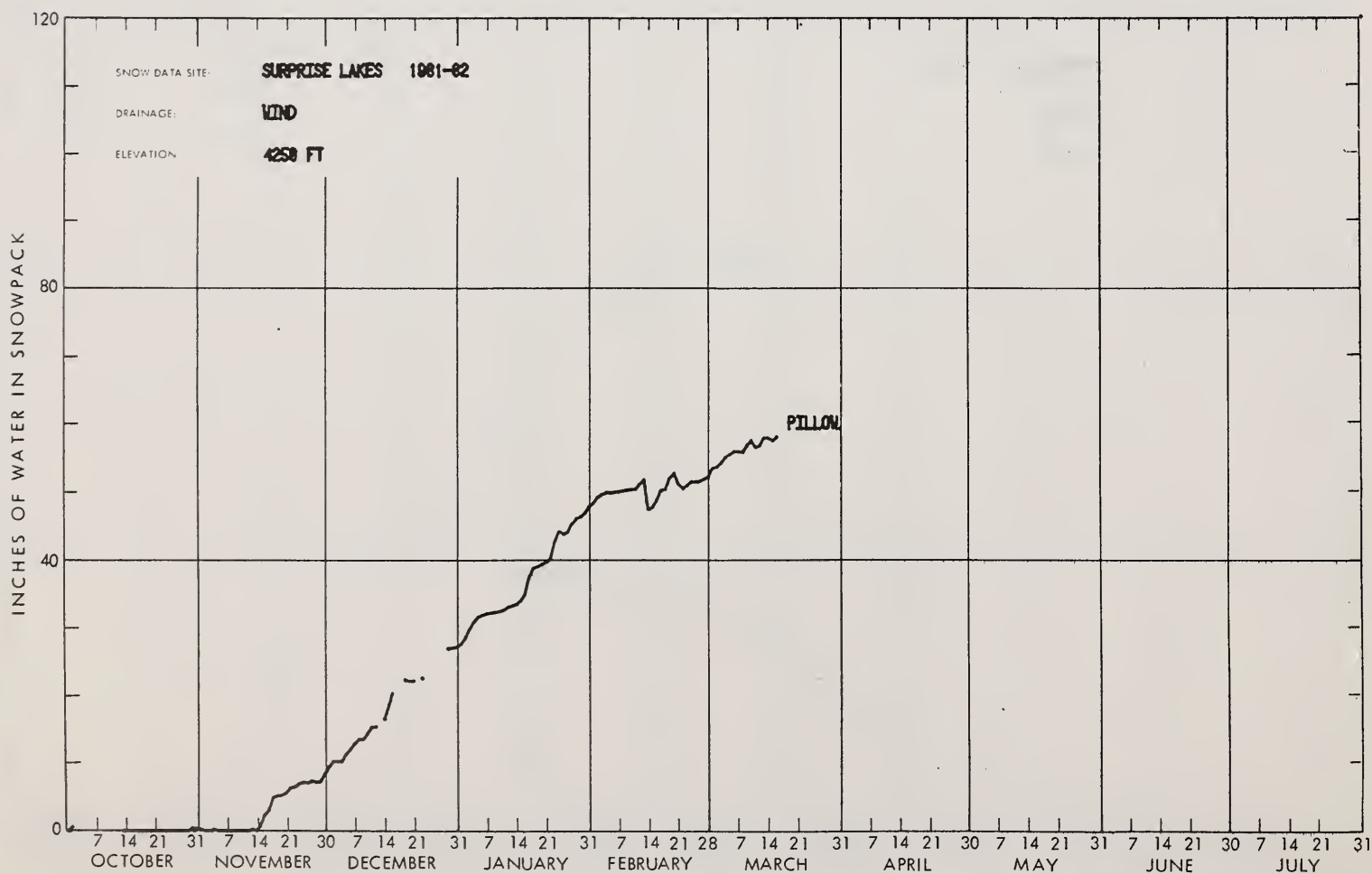
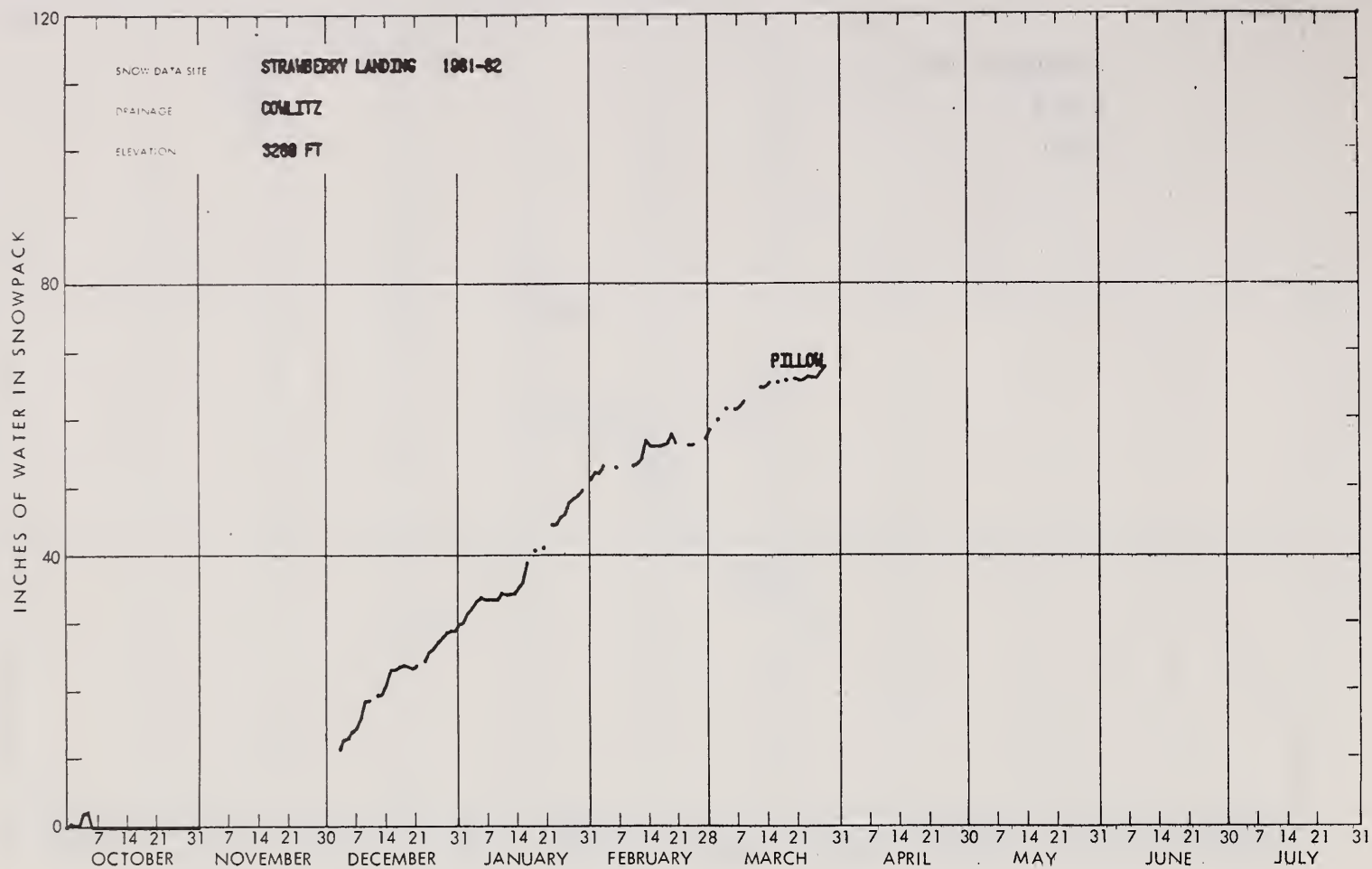


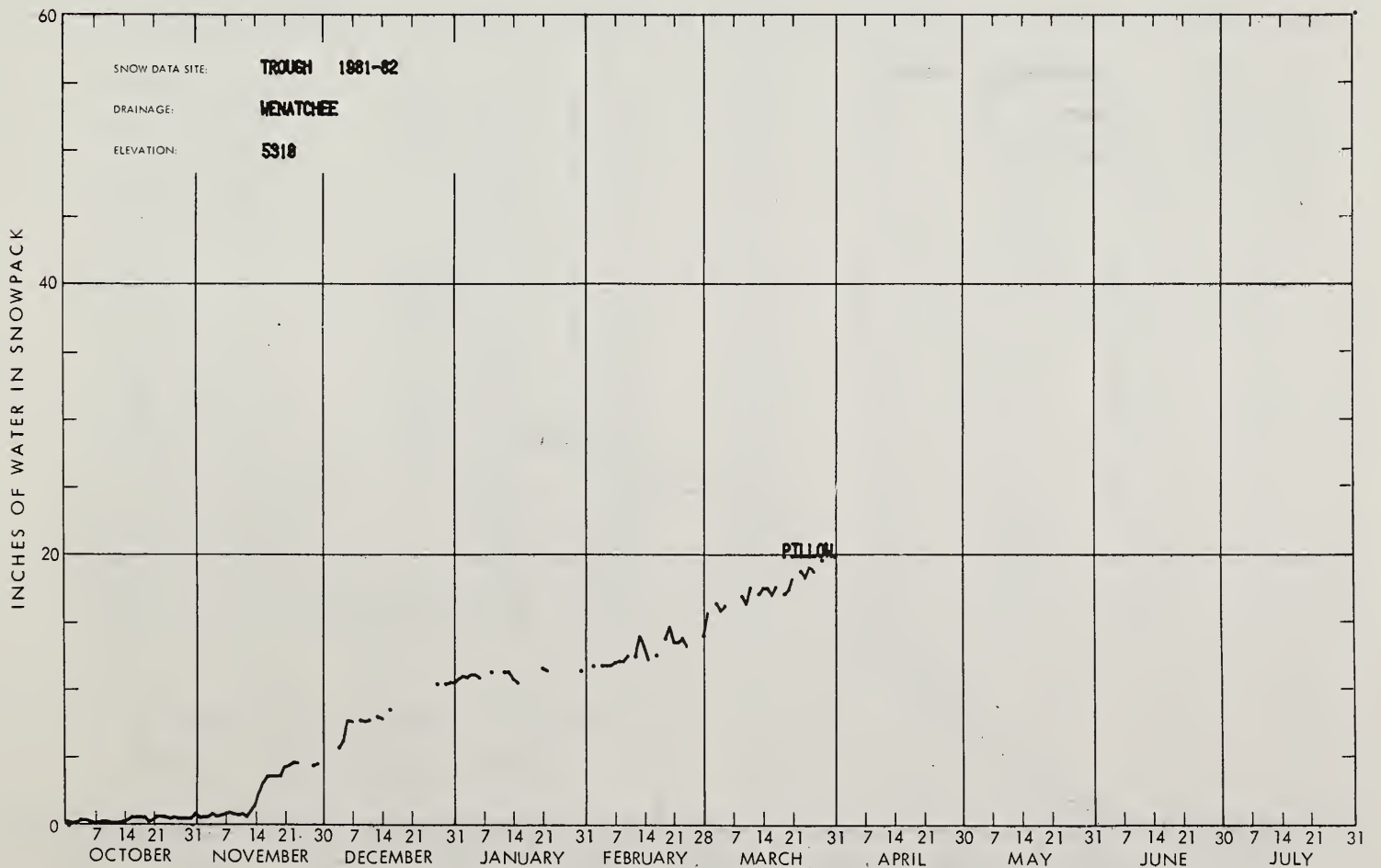
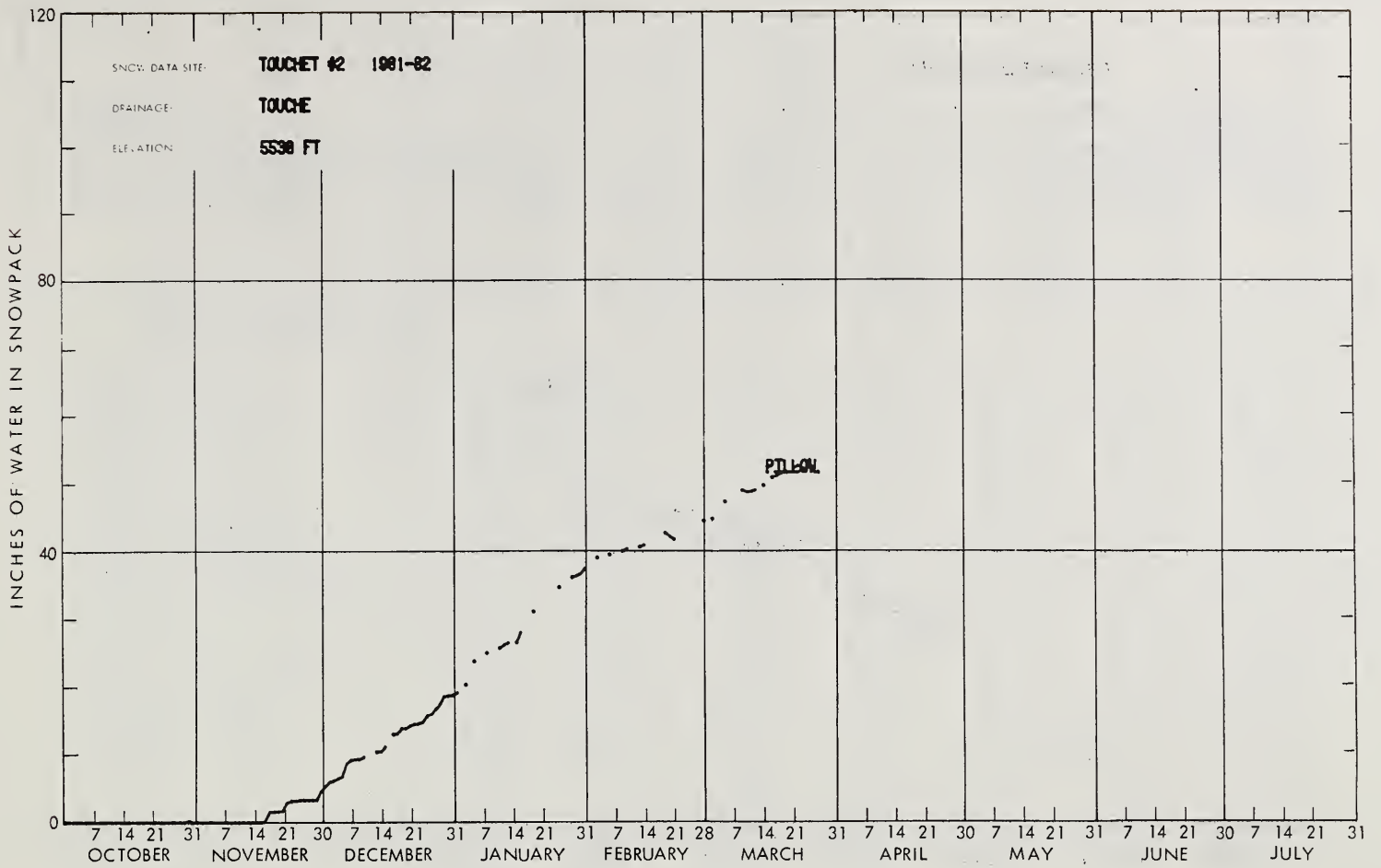


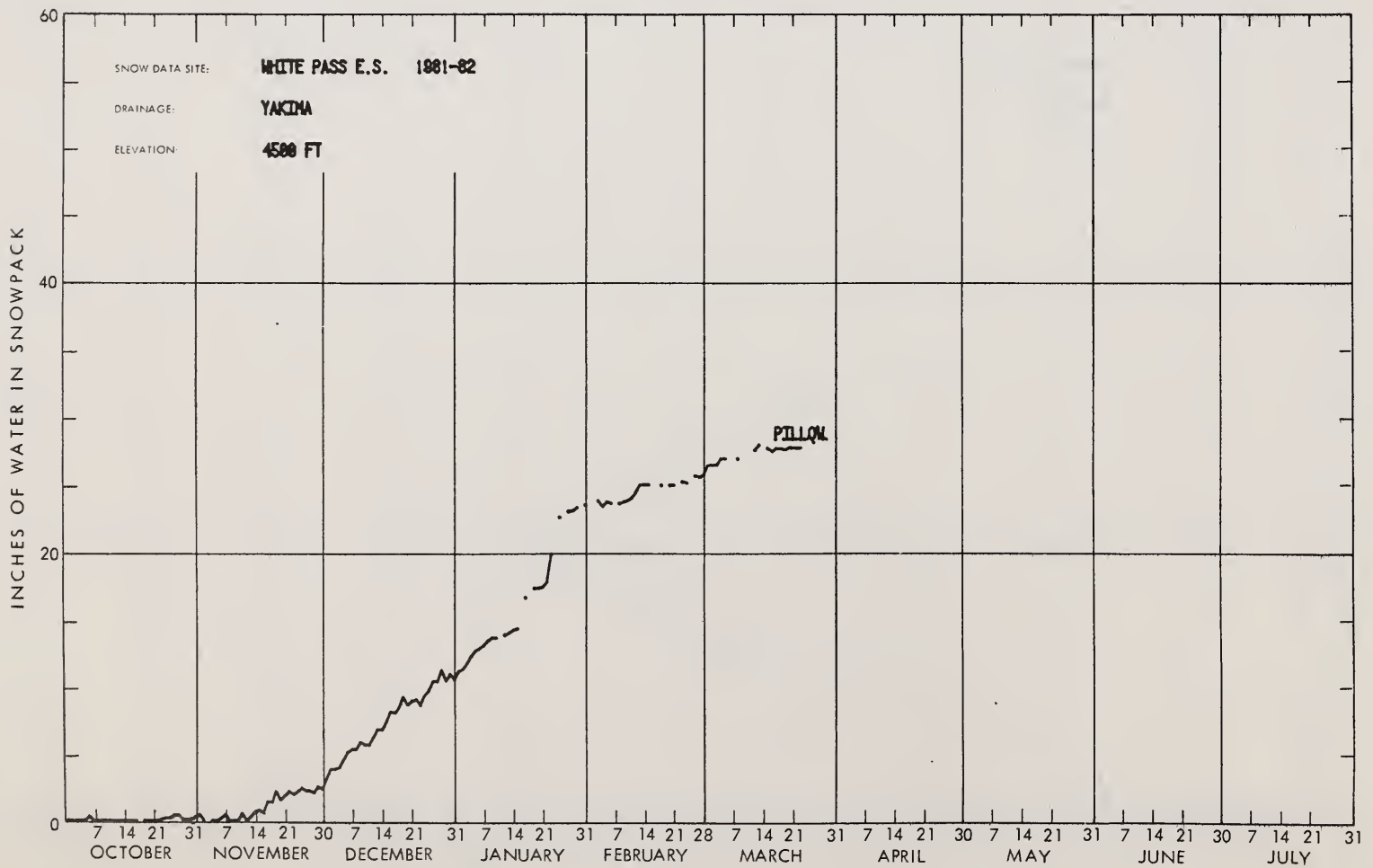
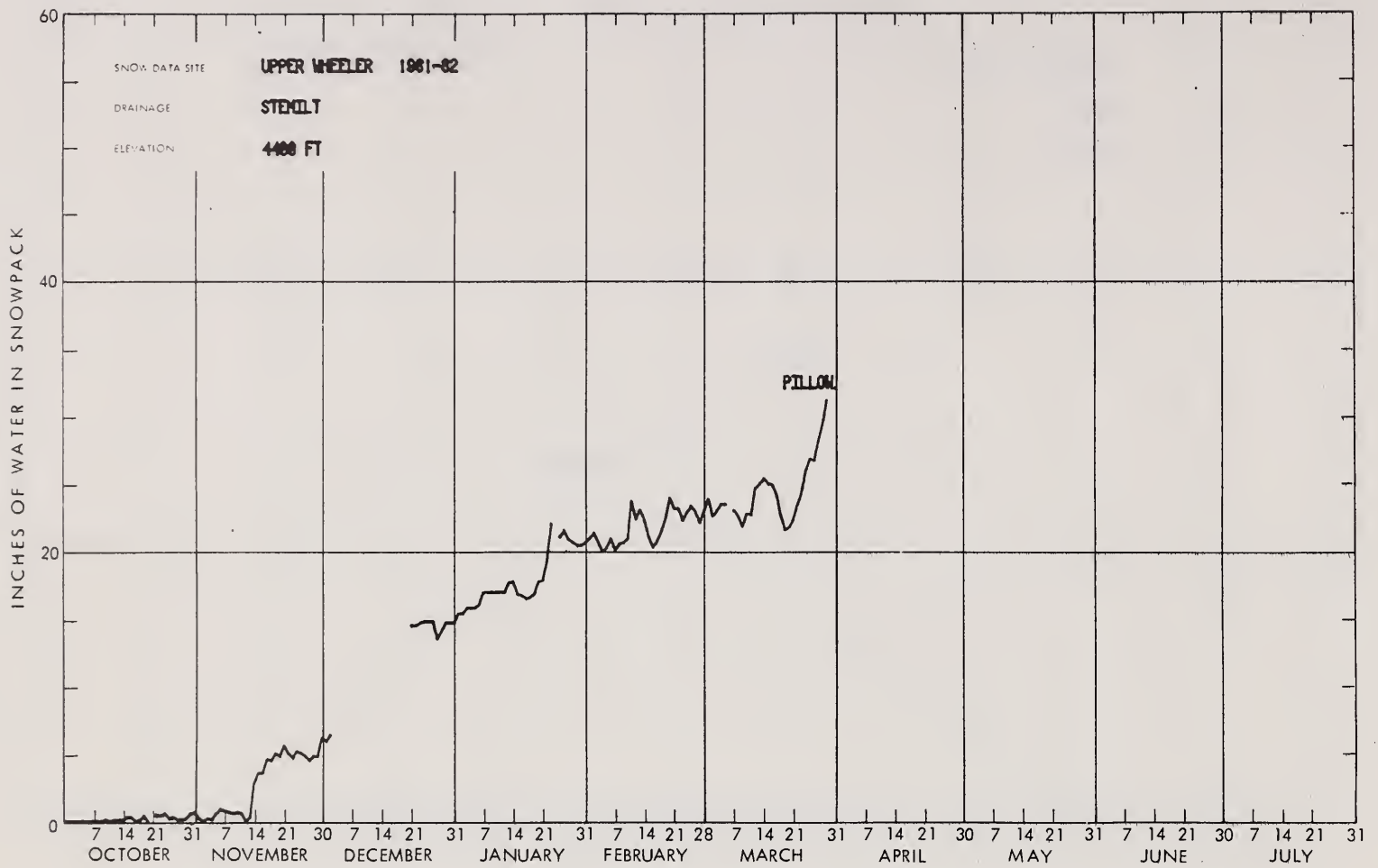












SNOW DATA TO APRIL 1, 1982 - APPENDIX 1

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (Inches)	
NAME	Number	Elevation				Last Year	Average [†] #

U P P E R C O L U M B I A D R A I N A G E

PEND OREILLE RIVER

Baree Creek	15B11	5500	3/31	121	49.5	28.0	50.3
Baree Midway	15B16	4600	3/30	99	39.5	16.1	38.8
Baree Trail	15B15	3800	3/31	24	9.2	0.5	9.8
Benton Meadow	16A02	2344	3/29	0	0.0	0.0	5.0
Benton Spring	16A03	4900	3/29	52	18.9	9.5	20.2
Boyer Mountain	17A02	5250	3/29	64	25.4	15.3	27.2
Brush Creek Timber	14A13	5000	3/29	34	11.0	3.9	10.6
Bunchgrass Meadow	17A01	5000	3/30	86	33.0	23.2	30.7
Chewelah	17A04	4923	3/28	46	14.6	8.3	17.0
Heart Lake Trail	14C10	4800	3/29	59	24.2	8.2	23.8
Hoodoo Basin	15C10	6000	3/29	148	65.0	34.4	53.6
Hoodoo Creek	15C01	5900	3/29	139	58.5	28.5	49.9
Lookout	15B02	5250	3/15	95	35.0	17.2	38.6
			3/30	97	37.6	17.0	37.1
Mosquito Ridge	16A04A	5100	4/1	109	41.8	25.6	40.2
Nelson	2D04-Can	3050	4/1	46	16.6	8.0	15.5*
Schweitzer Bowl	16A06	4500	4/1	96	38.6	-	30.9
Schweitzer Ridge	16A05	6100	4/1	134	54.5	38.1	47.8
Smith Creek	16A01	4800	3/31	127	52.8	34.2	48.8
Winchester Creek	17A03	2970	3/29	17	7.5	0.0	11.2

KETTLE RIVER

Barnes Creek	2B06-Can	5300	3/25	59	22.1	16.2	20.7*
Big White Mtn.	2E03-Can	5500	4/1	62	21.7	15.2	20.2*
Bluejoint Mtn.	2E06-Can	7500	3/25	87	33.6	23.5	24.6*
Boulder Road	18A02	1450	3/30	0	0.0	0.0	2.4
Butte Creek	18A03	4070	3/30	33	8.6	5.8	9.5
Cabin Creek	18A08	3170	3/30	29	8.3	5.7	8.3
Carmi	2E02-Can	4100	4/1	27	6.7	3.5	6.4*
Farron # 1	2B02-Can	4000	3/31	47	13.7	10.6	13.2*
Farron # 2	2B02A-Can	4000	3/31	50	14.6	10.7	12.8*
Goat Creek	18A04	3595	3/30	16	4.0	1.1	5.3
Graystoke Lake	2F04-Can	5950	3/30	57	18.2	8.6	18.4*
Monashee Pass	2E01-Can	4500	3/25	46	15.6	11.2	13.9*
Old Glory Mountain	2B03-Can	7000	3/27	83	30.6	25.8	28.7*
Snow Caps Creek	18A05	2150	3/30	0	0.0	0.0	2.2
Snow Caps Trail	18A06	2720	3/30	12	4.2	0.0	4.9
Summit G.S.	18A07	4600	3/30	26	8.0	4.4	8.5
Trapping Creek Lower	2E05-Can	3050	4/1	14	4.1	0.0	3.6*
Trapping Creek Upper	2E04-Can	4450	4/1	33	10.9	6.0	10.0*

Average based on 1963-77 Average

* Average for years of record

SNOW DATA TO APRIL 1, 1982 - APPENDIX 2

SNOW			THIS YEAR			PAST RECORD	
DRAINAGE BASIN and/or SNOW COURSE			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Number	Elevation				Last Year	Average [#]

COLVILLE RIVER

Baird	17A06	3215	3/28	12	4.8	0.0	5.6
Carlson	18A09	2885	3/28	0	0.0	0.0	2.6
Chewelah	17A04	4925	3/28	46	14.6	8.3	17.0
Stranger Mountain	17A05	4990	3/28	32	10.5	2.0	14.5
Togo	18A10	3370	3/28	23	8.8	0.0	12.9

SPOKANE RIVER

Above Burke	15B08	6100	3/30	53	21.4	8.4	24.7
Above Roland	15B07	4350	4/1	83	35.8	13.6	35.2
Below Roland	15B06	3770	4/1	34	14.1	0.0	16.5
Copper Ridge	16B02	4800	3/30	62	26.6	3.6	29.7
Forty-nine Meadows	15B03	5000	4/2	79	28.6	16.2	32.5
Fourth of July Summit	16B03	3100	3/15	19	5.5	0.0	-
			3/31	11	3.2	0.0	8.8
Granite Peak	15B13A	6000	4/2	140	44.2	22.1	46.8
Kellogg Peak	16B05A	5560	4/1	92	36.2	13.6	35.4
Lookout	15B02	5250	3/15	95	35.0	17.2	38.6
			3/30	97	37.6	17.0	37.1
Lost Lake	15B14A	6000	4/2	167	57.5	34.3	61.8
Lower Sands Creek	16B01	3400	3/30	43	16.4	4.2	21.9
Mosquito Ridge	16A04A	5110	4/1	109	41.8	25.6	40.2
Ragged Ridge	17B02	3333	3/9	7.2	2.6	New	New
Roland Summit	15B05A	5200	4/1	106	46.4	13.0	40.1
Sherwin	16C01	3200	3/25	37	15.1	0.4	13.8
Sunset	15B09A	5600	4/1	100	37.0	17.0	36.2

SANPOIL RIVER

Sherman Creek Pass	18A01	5350	3/31	55	14.3	9.4	15.0
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OKANOGAN RIVER

Aberdeen Lake	1F01A-Can	4300	3/30	29	7.9	2.6	6.1*
Blackwall Peak	2G03-Can	6250	3/31	93	35.1	22.8	34.4*
Bouleau Lake	2F21-Can	4580	3/28	54	16.1	9.4	15.1*
Brenda Mine	2F18-Can	4800	3/29	45	13.9	7.8	13.4*
Brookmere	1C01-Can	3200	3/31	33	7.5	6.9	9.4*
Enderby	1F04-Can	6250	3/30	133	50.9	34.8	38.6*
Esperon Creek Lower	2F15-Can	4400	3/28	43	13.8	7.1	11.8*
Esperon Creek Middle	2F14-Can	4700	3/28	50	16.6	9.1	15.4*
Esperon Creek Upper	2F13-Can	5400	3/28	58	18.6	10.6	18.5*
Freezeout Mdw New	20A38	5000	3/28	85	30.7	17.6	41.0
Grayback Res.	2F08-Can	5225	4/1	39	9.5	5.7	9.2*
Graystoke Lake	2F04-Can	5950	3/30	57	18.2	8.6	18.4*
Hamilton Hill	2G06-Can	4900	3/28	44	16.9	8.6	15.5*

Average based on 1963-77 Average

* Average for years of record

SNOW DATA TO APRIL 1, 1982 - APPENDIX 3

SNOW			THIS YEAR			PAST RECORD	
DRAINAGE BASIN and/or SNOW COURSE			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Number	Elevation				Last Year	Average #
OKANOGAN RIVER (Cont.)							
Harts Pass	20A05A	6500	3/27	119	45.1	30.6	48.5
Horseshoe Basin +	19A05a	7000		Not Measured		12.5	19.4
Isintok Lake	2F11-Can	5510	3/27	28	8.3	3.1	8.0*
Lightning Lake	3D02-Can	4000	3/30	41	15.0	5.9	14.2*
Lost Horse Mountain	2G04-Can	6300		Not Measured		6.8	9.3*
Loup Loup	19A07	4650	3/30	40	10.4	6.2	9.2
McCulloch	2F03-Can	4200	3/27	28	7.8	4.1	6.7*
Missezula Mountain	2G05-Can	5100	3/29	35	11.0	6.7	9.0*
Mission Creek	2F05-Can	6000	3/30	67	22.8	13.0	20.1*
Monashee Pass	2E01-Can	4500	3/25	46	15.6	11.2	13.9*
Mount Kobau	2F12-Can	5950	3/27	43	13.6	9.8	12.6*
Muckamuck +	19A09a	6390		Not Measured		-	17.9
Mutton Creek No. 1	19A01	5700	3/30	63	15.6	9.2	14.7
Mutton Creek No. 2 SP	19A11	6000	3/30	-	18.6	5.6	13.0
Nickel Plate Mtn.	2G02-Can	6200	3/30	32	9.4	3.6	8.1*
Oyama Lake	2F19-Can	4400	3/31	30	8.5	3.5	6.9*
Paysayten +	20A28a	4300		Not Measured		16.4	18.7
Postill Lake	2F07-Can	4500	3/31	35	10.1	6.8	9.1*
Rusty Creek	19A03	4000	4/1	34	6.0	3.8	6.6
Salmon Meadows	19A02	4500	4/1	54	11.7	9.2	10.3
Silver Star Mountain	2F10-Can	6050	3/28	92	35.2	20.2	28.3*
Starvation Mtn +	19A10a	6750		Not Measured		17.2	20.7
Summerland Reservoir	2F02-Can	4200	3/27	31	9.4	4.7	9.3*
Sunday Summit	2G01A-Can	4300	3/30	19	6.7	0.4	5.0
Touts Coulee	19A06	2845	3/31	11	1.9	0.0	1.8
Trout Creek	2F01-Can	4700	3/23	24	7.4	2.4	7.5*
Vaseux Creek	2F20-Can	4600	3/30	29	7.4	4.3	6.5*
White Rocks Mountain	2F09-Can	6000	3/29	72	25.5	12.7	23.1*

METHOW RIVER

Billy Goat Pass +	20A10a	6409		Not Measured		-	38.0
Dollar Watch +	20A29a	7000		Not Measured		-	31.9
Harts Pass	20A05A	6500	3/27	119	45.1	30.6	48.5
Horseshoe Basin +	19A05a	7000		Not Measured		12.5	19.4
Loup Loup	19A07	4650	3/30	40	10.4	6.2	9.2
Mutton Creek No. 1	19A01	5700	3/30	63	15.6	9.2	14.7
Mutton Creek No. 2 SP	19A11	6000	3/30	-	18.6	5.6	13.0
Rusty Creek	19A03	4000	4/1	34	6.0	3.8	6.6
Salmon Meadows	19A02	4500	4/1	54	11.7	9.2	10.3
War Creek Pass +	20A31a	6500		Not Measured		-	44.4

CHELAN LAKE BASIN

Cloudy Pass +	20A22a	6500		Marker Down		34.3	49.8
Little Meadows +	20A24a	5275	4/1	148	57.7	26.6	49.0
Lyman Lake	20A23A	5900	4/1	165	65.9	37.3	65.5

Average based on 1963-77 Average

* Average for years of record

+ Snow water equivalent estimated from aerial stadia observation

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SNOW DATA TO APRIL 1, 1982 - APPENDIX 4

SNOW			THIS YEAR			PAST RECORD	
DRAINAGE BASIN and/or SNOW COURSE			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Number	Elevation				Last Year	Average [#]

CHELAN LAKE BASIN (Cont.)

Mirror Lake	20A39	5600	4/1	118	45.1	-	New
Park Creek Ridge	20A12A	4600	4/1	119	49.8	22.3	47.0
Rainy Pass	20A09	4780	3/28	115	42.0	23.1	43.7
Safety Harbor	20A30A	6300		Not Measured		-	32.1
War Creek Pass +	20A31a	6500		Not Measured		-	44.4

ENTIAT RIVER

Blue Creek G.S.	20B28a	5425	3/24	122	47.6	26.6	43.5
Brief	20B19	1600	3/27	0	0.0	0.0	4.6
Entiat Meadows +	20A33a	4540	3/24	126	49.1	28.9	49.3
Entiat River Trail +	20A34a	3325	3/24	58	24.1	3.8	18.2
Four Mile Ridge +	20B27a	6800	3/24	98	38.2	22.2	37.8
Fox Camp +	20A36a	6510	3/24	158	61.6	46.6	57.8
Pope Ridge	20B20	3540	3/26	55	22.5	7.2	18.9
Pugh Ridge +	20A32a	6725	3/24	107	41.7	27.0	37.5
Shady Pass	20A37	6200	3/26	86	33.9	20.1	32.9
Snow Brushy +	20A35a	3910	3/24	115	47.7	21.7	40.3
Tommy Creek +	20B21a	4900	3/24	73	28.5	10.4	27.3

WENATCHEE RIVER

Berne-Mill Creek	21B23	2925	3/29	79	32.0	10.0	29.8
Berne-Mill Creek New	21B41SP	3240	3/29	66	28.5	1.9	28.3
Blewett Pass No. 2	20B02	4270	3/26	37	14.9	3.0	16.9
Chiwaukum G.S.	20B16	1810	3/29	30	11.6	0.0	10.2
Fish Lake	21B04	3371	3/26	89	39.9	7.1	35.3
Lake Wenatchee	20B05	1970	3/29	39	15.6	0.0	12.9
Leavenworth R.S.	20B17	1127	3/29	0	0.0	0.0	0.6
Lyman Lake	20A23A	5900	4/1	165	65.9	37.3	65.5
Merritt	20B18	2140	3/29	41	17.5	0.0	15.5
Stevens Pass	21B01	4070	3/29	128	56.8	17.2	54.9
Stevens Pass Sand Shed	21B45	3700	3/29	95	40.6	6.9	39.5

SQUILCHUCK CREEK

Beehive Springs	20B03	4400	3/30	16	5.8	0.9	7.9
Scout-A-Vista	20B04	3400	3/30	19	6.7	2.7	7.3

STEMILT CREEK

Jump-Off	20B08	4450	3/29	26	8.6	1.4	8.2
Stemilt Slide	20B06	5000	3/29	43	15.0	5.0	13.7
Upper Wheeler	20B07	4400	3/29	13	5.1	0.0	8.7

Average based on 1963-77 Average

+ Snow water equivalent estimated from aerial stadia observation

SNOW DATA TO APRIL 1, 1982 - APPENDIX 5

SNOW			THIS YEAR			PAST RECORD	
DRAINAGE BASIN and/or SNOW COURSE			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (Inches)	
NAME	Number	Elevation				Last Year	Average †#
COLOCKUM CREEK							
Colockum Creek Upper	20B22	5300	3/29	36	12.1	3.9	15.1
Colockum Creek Lower	20B23	4300	3/29	21	6.5	1.8	9.9
Trough # 2	20B25SP	5310	3/29	52	15.5	7.0	New
YAKIMA RIVER							
Ahtanum R.S.	21C11	3100	3/24	8.5	4.6	0.0	6.0
Big Boulder Creek	21B09	3200	3/26	54	24.8	0.0	20.1
Blewett Pass No. 2	20B02	4270	3/26	37	14.9	3.0	16.9
Bumping Lake	21C08	3450	3/12	36	13.2	1.8	17.1
			3/25	31	13.3	0.0	16.5
Bumping Lake New	21C36	3400	3/12	48	18.8	5.6	22.0
			3/25	43	18.5	0.0	21.7
Cayuse Pass	21C06	5300	3/30	209	89.0	36.9	90.3
Colockum Pass	20B09	5370	3/29	51	19.7	8.2	16.6
Cooke Creek	20B10	4123	3/29	Trace	0.0	0.0	5.1
Corral Pass	21B13	6000	4/5	124	51.0	22.4	43.4
Fish Lake	21B04	3371	3/26	89	39.9	7.1	35.3
Green Lake	21C10	6000	3/24	102	48.2	19.0	34.9
Grouse Camp	20B11	5385	3/30	53	20.7	9.8	16.6
High Creek	20B12	2930	3/30	Trace	0.0	0.0	3.6
Joe Lake +	21B46a	4624	3/24	174	88.6	-	70.6
Lake Cle Elum	21B14M	2200	3/10	24	10.9	0.0	10.0
			3/30	16	7.1	0.0	6.7
Lemah Creek +	21B47a	3327	3/24	105	53.4	5.3	46.6
Manashtash	20C01	3935	3/29	3.1	1.0	0.0	3.0
Morse Lake	21C17	5400	3/27	142	65.9	30.0	59.6
Nanum	20B13	3875	3/30	18	5.9	0.0	8.2
Olallie Meadows	21B02	3625	4/5	112	50.0	8.5	51.9
Satus Pass	20D01	4030	3/25	8.7	4.0	0.0	9.6
Stampede Pass SP	21B10	3860	3/15	120	54.4	10.5	41.5
			4/2	112	60.6	9.5	43.9
Trail Creek	20B14	3360	3/29	0	0.0	0.0	0.0
Tunnel Avenue	21B08	2450	3/10	58	24.4	5.2	25.9
			3/30	58	25.3	1.8	24.6
Van Epps Pass +	20B26a	5925	3/24	146	74.3	26.2	57.5
Walters Flat	20B15	3360	3/30	9.8	4.1	0.0	5.5
Waptus Lake +	21B49a	3024	3/24	108	55.0	12.7	44.5
White Pass (E. Side)	21C28	4500	3/11	71	28.2	5.9	25.1
			3/26	67	29.8	6.3	26.0
AHTANUM CREEK							
Ahtanum R.S.	21C11	3100	3/24	8.5	4.6	0.0	6.0
Green Lake	21C10	6000	3/24	102	48.2	19.0	34.9

Average based on 1963-77 Average

+ Snow water equivalent estimated from aerial stadia observation

SNOW DATA TO APRIL 1, 1982 - APPENDIX 6

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Number	Elevation				Last Year	Average [#]

LOWER COLUMBIA DRAINAGESASOTIN CREEK

Spruce Springs	17C04	5700	3/29	68	28.0	10.4	26.4
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MILL CREEK

Homestead	17C01	4030	3/24	29	11.9	0.5	8.9
Martin Springs	17C02	4400	3/24	42	17.9	1.0	14.9
High Ridge	18D19	4150	4/1	101	42.9	17.2	32.3

KLICKITAT RIVER

Satus Pass	20D01	4030	3/25	8.7	4.0	0.0	9.6
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LEWIS RIVER

June Lake	22C05	3200	4/1	62	25.5	5.1	40.2
Lone Pine Shelter	21C26	3800	4/1	-	51.3	11.8	43.2
Plains of Abraham	22C01	4400		Not Measured		7.1	72.0
Sheep Canyon	22C10SP	4050	3/30	117	53.6	5.4	New
Spencer Meadow	21C20a	3400		Not Measured		10.3	25.7
Surprise Lakes	21C13A	4250	4/1	-	59.6	8.3	53.7

COWLITZ RIVER

Cayuse Pass	21C06	5300	3/30	209	89.0	36.9	90.3
Strawberry Landing	22C08SP	3280	4/1	-	70.3	9.5	New
White Pass (E. Side)	21C28	4500	3/11	71	28.2	5.9	25.1
			3/26	67	29.8	6.3	26.0

PUGET SOUND DRAINAGEWHITE RIVER

Cayuse Pass	21C06	5300	3/20	209	89.0	36.9	90.3
Corral Pass	21B13	6000	4/5	124	51.0	22.4	43.4
Morse Lake	21C17	5400	3/27	142	65.9	30.0	59.6

GREEN RIVER

Airstrip	21B24	1800	3/29	0	0.0	0.0	2.1
Charley Creek	21B25	1200	3/29	0	0.0	0.0	0.0
Cougar Mountain SP	21B42SP	3200	4/1	58	25.7	3.3	25.1
Grass Mtn. No. 2	21B27	2900	3/29	34	12.0	1.2	24.3
Grass Mtn. No. 3	21B28	2100	3/29	0	0.0	0.0	4.9
Lester Creek	21B29	3100	3/29	66	22.6	1.8	27.5
Lynn Lake	21B50	4000	3/29	66	25.7	2.7	29.8
Sawmill Ridge	21B31	4700	3/29	94	36.8	13.2	41.6
Snowshoe Butte SP	21B43SP	5000	4/5	146	62.5	19.8	59.8
Stampede Pass SP	21B10	3860	3/15	120	54.4	10.5	41.5
			4/2	112	60.6	9.5	43.9
Twin Camp	21B30	4100	3/29	76	30.0	2.4	27.8

Average based on 1963-77 Average

SNOW DATA TO APRIL 1, 1982 - APPENDIX 7

SNOW			THIS YEAR			PAST RECORD	
DRAINAGE BASIN and/or SNOW COURSE			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Number	Elevation				Last Year	Average #
<u>CEDAR RIVER</u>							
City Cabin	21B03	2390	3/29	32	13.5	0.0	20.0
Mt. Gardner	21B21	3300	3/29	35	15.3	0.0	19.8
<u>SNOQUALMIE RIVER</u>							
Alpine Meadow	21B48	3500	3/28	124	56.4	4.9	55.2
Olallie Meadows	21B02	3625	4/5	112	50.0	8.5	51.9
<u>SKYKOMISH RIVER</u>							
Stevens Pass	21B01	4070	3/29	128	56.8	17.2	54.9
Stevens Pass Sand Shed	21B45	3700	3/29	95	40.6	6.9	39.5
<u>SKAGIT RIVER</u>							
Beaver Creek Trail	21A04	2200	3/28	39	15.4	0.0	15.4
Beaver Pass	21A01	3680	3/27	90	36.2	5.7	35.0
Brown Top Ridge +	21A28a	6000	3/27	166	65.6	39.0	74.2
Cloudy Pass +	20A22a	6500		Not Measured		34.3	49.8
Devils Park	20A04	5900	3/27	119	45.4	29.0	47.7
Freezeout Creek Trail	20A01	3500	3/28	43	14.6	0.3	13.7
Freezeout Meadows New	20A38	5000	3/28	85	30.7	17.6	41.0
Granite Creek	20A06	3500	3/28	59	20.7	6.4	22.3
Harts Pass	20A05A	6500	3/27	119	45.1	30.6	48.5
Klesilkwa	3D03A-Can	3700	4/1	49	19.9	0.0	14.8*
Lightning Lake	3D02-Can	4000	3/30	41	15.0	5.9	14.2*
Lyman Lake	20A23A	5900	4/1	165	65.9	37.3	65.5
Meadow Cabins	20A08	1900	3/27	17	6.6	0.0	6.6
New Hozomeen Lake	21A30	2800	3/28	35	12.7	0.0	15.2
New Tashme	3D01A-Can	2500	3/31	35	11.9	0.0	10.6*
Rainy Pass	20A09	4780	3/28	115	42.0	23.1	43.7
Thunder Basin	20A07	4200	3/27	68	24.4	5.2	24.7
<u>BAKER RIVER</u>							
Dock Butte	21A11A	3800		Late Report		-	74.5
Easy Pass	21A07A	5200		Late Report		-	88.7
Jasper Pass	21A06A	5400		Late Report		-	92.6
Marten Lake	21A09A	3600		Late Report		-	82.8
Mount Blum +	21A18a	5800		Late Report		-	65.9
Panorama New	21A26	4300		Late Report		16.3	77.0
Rocky Creek	21A12A	2100		Late Report		-	34.4
Schreibers Meadow	21A10A	3400		Late Report		-	68.8
S. F. Thunder Creek	21A14A	2200		Late Report		-	7.9
Watson Lakes	21A08A	4500		Late Report		-	72.3

Average based on 1963-77 Average

* Average for years of record

+ Snow water equivalent estimated from aerial stadia observation

SNOW DATA TO APRIL 1, 1982 - APPENDIX 8

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Number	Elevation				Last Year	Average #

O L Y M P I C P E N I N S U L ADUNGENESS RIVER

Deer Park	23B04	5200	3/29	69	24.9	6.4	22.9
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MORSE CREEK

Cox Valley	23B14	4500	3/28	116	47.6	11.0	44.3
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ELWHA RIVER

Hurricane	23B03	4500	3/27	70	25.3	2.8	26.9
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Average based on 1963-77 Average